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# Newsweek

03.20.2015

*Viva el  
Capitalismo!*

IS CUBA  
READY  
FOR ITS  
MONEY  
SHOT?



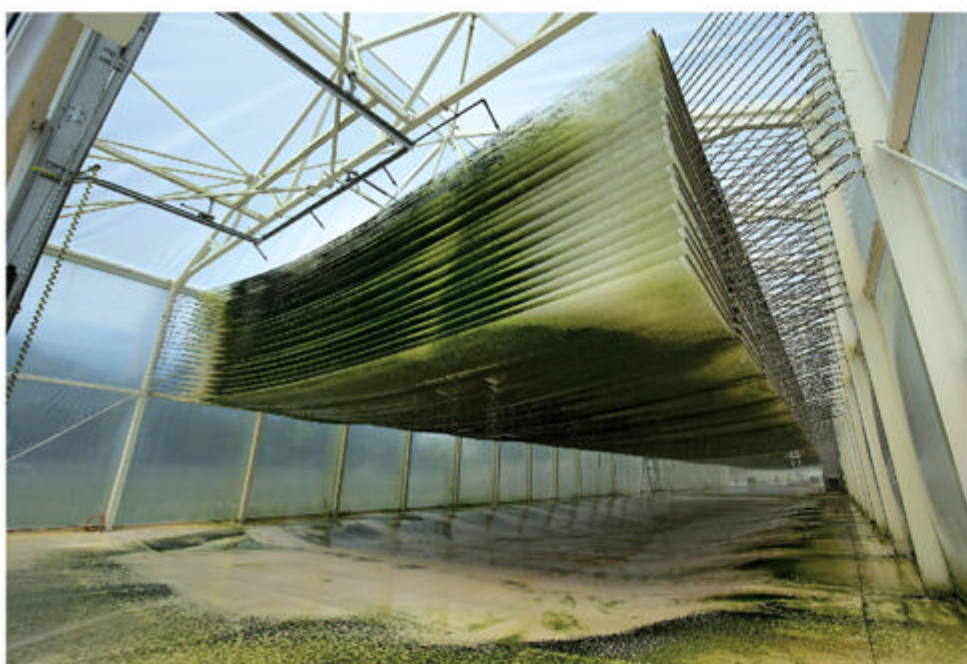
# Newsweek

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Cuba is on the cusp of another revolution, this one fought with lines of credit instead of rifles and slogans



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*'SMART'  
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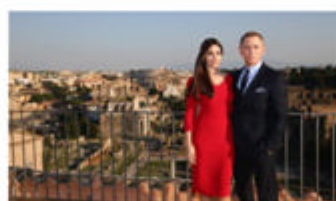
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*THE  
GUERRILLA  
ART OF THE  
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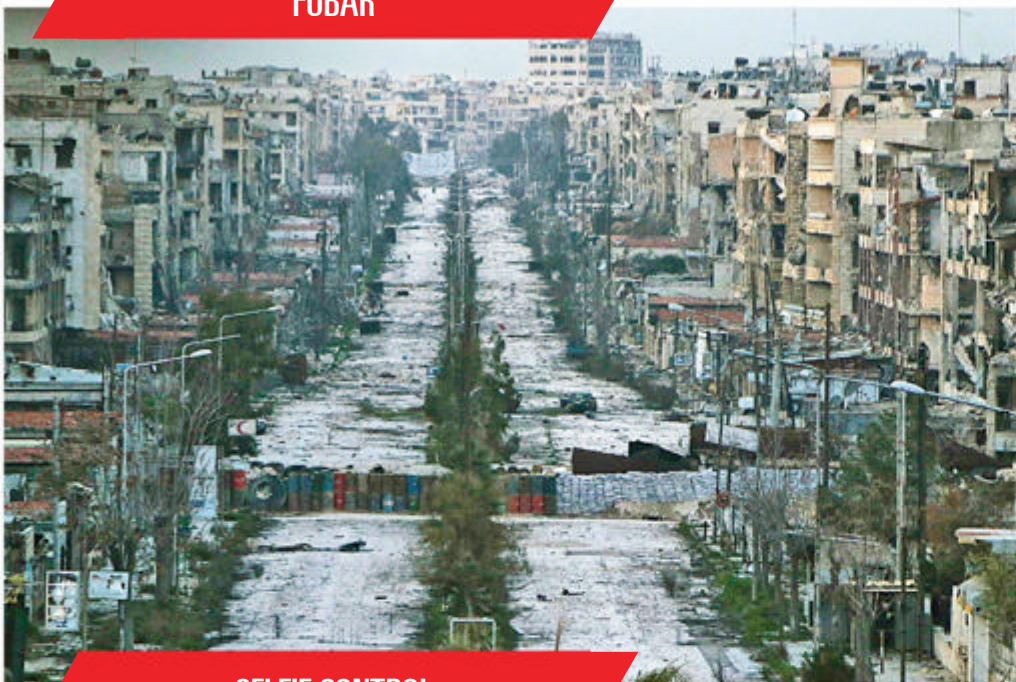


*CUE ASTON  
MARTINS AND  
PARACHUTES  
AS BOND  
CAUSES A STIR  
IN ROME*

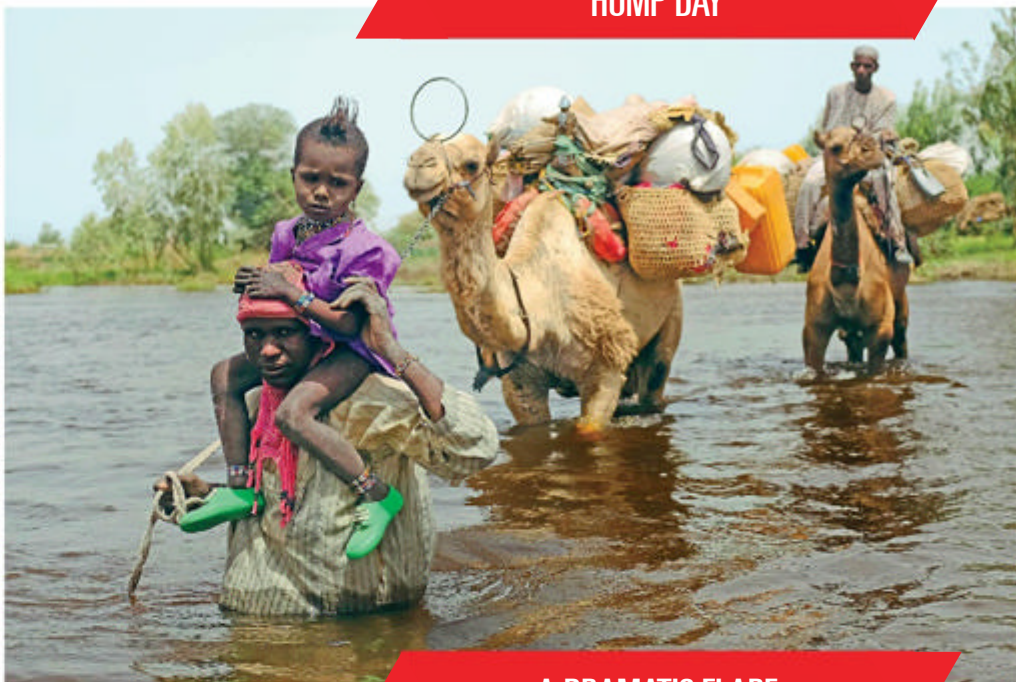


# BIG SHOTS

FUBAR



HUMP DAY



SELFIE CONTROL



A DRAMATIC FLARE







Lisette Poole for Newsweek

## *CUBA'S BAY OF FAT CATS*

**CUBA IS ON THE CUSP OF ANOTHER REVOLUTION,  
THIS ONE FOUGHT WITH LINES OF CREDIT INSTEAD OF  
RIFLES AND SLOGANS**

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Traveling from Miami to Havana is a haphazard, seemingly nonsensical process that requires patience, guile, humor and a ruthless willingness to cut lines. Thankfully, I'm traveling with Alberto Magnan, so we skip the airport check-in line because he knows a guy. Magnan, who's 53, was born in Cuba, left at the age of 7 and, aside from a short



stay in Spain, has been living in New York City ever since. He and his wife, Dara Metz, are behind the **Magnan Metz** art gallery in Chelsea, where they focus on international artists, particularly Cubans. Ninety minutes before our flight takes off, we breeze past the folks who started lining up two hours ago, and head straight for the ticket counter, where he greets a woman who is clearly in charge of something. She takes my passport, then disappears. Magnan tells me not to worry.

While we wait, he introduces me to Mark Elias, president of Havana Air. He says long lines have been “the norm” for years for charter flights between Miami and Cuba. Most flights “require three or four different check-in positions to finally get your boarding pass,” Elias says, adding with a bit of pride, “but we check the flights differently. We check a flight in an hour and a half.”

Thankfully, the woman who took my passport reappears about 20 minutes later. She hands me a rectangular folder, and inside I find my boarding pass, my return ticket, my passport and a brochure about Cuba. Tucked all the way in the back is a pale blue piece of paper that looks like trash. “Don’t lose it,” she says.

“What happens if I do?”

She and Magnan say, almost in unison, “Don’t.”

Less than an hour after we take off, we land in Havana. As soon as the wheels touch down, the pilot comes on the intercom: “If you’re happy to be in Havana, clap!” The plane sounds like my apartment did when the New England Patriots won the Super Bowl in February (I’m from Boston).

By the time Magnan and I drop our bags at the hotel and eat dinner, it’s evening. We’ve hired a driver, a thin, 50-year-old man named Raphael. He is a trained physician, but he quit medicine after four years to start his taxi business. He drops us off at the mouth of Plaza de San Francisco de Asis in Old Havana, and before we walk 15 feet, half a dozen taxistas converge on us. Need a ride? Americano? Where



to? I shake my head no and keep walking toward the vast cobblestone square, which is lit up with floodlights and packed with people.



*The view from Hugo Cancio's office in Havana. "On Cuba" has set up office as foreign press on the island, complete with internet and computers on the 8th story of this building in El Vedado neighborhood.* Credit: Lisette Poole for Newsweek

Day and night, tourists flock here for the historical sites and architecture. Across the street is Havana's seafront boulevard, the Malecón, teeming with young people, day or night. In a country where many earn in a month less than what it costs to eat at a paladar (a privately owned restaurant, as compared with the dominant state-run restaurants, where the government funds the eating establishment and makes decisions about management and wages), the Malecón gives locals something to do. We walk through the plaza, down a ways and into a modest lobby. There's a security guard at the door and, just inside, a woman sitting behind a desk. Magnan speaks to her in Spanish. I have no idea what he says (I speak high school French), but he's clearly persuasive, because eventually she nods. We're in.



Magnan, a few of his friends and I pile into the tiny elevator. Someone asks him a question about the event, but Magnan silently shakes his head and points to the ceiling. His message is clear: They're listening. We all shut up and wait for the doors to open.

When they do, we are on the roof-deck of a two-story penthouse apartment overlooking Old Havana. The scene looks as if it's been airlifted from a high-end Miami hotel: sleek white chairs and couches, delicate flower arrangements, a full bar. Off to one side, a film is being projected onto the facade of a nearby building.

Half an hour later, guests start disappearing inside, so I follow—down a spiral staircase until I reach a living room so vast and opulent I feel as if I'm on the set of a Leonardo DiCaprio period drama. A large hammock of thick velvet hangs from the ceiling. The floors are covered in ornate rugs. Oversized plants rise up against the walls studded with sconces and artwork. Nearby, equally ornate rooms hold a pool table and a robust dinner buffet. Down the hall is the most pristine bathroom I'll see during my week in Havana. Perched on a ledge near the shower is a fat statue of...yes, those are penises.



*On set at the recording of salsa group, La Charanga Habanera's music video "Olvida que te Olvidé," model Ailén Soto Serrer fixes her hair in between takes. She is the wife of a singer from La Charanga, Heikel Valdes García, aka "Sexy Boy." Credit: Lisette Poole for Newsweek*

Everyone here is dressed—older women in gowns, young models in tight dresses, men in sharp suits and hats and shiny shoes. It's as if age—and Communism—doesn't exist here; older guests mingle with the younger set, and not a single person is looking at a smartphone. I am surrounded by Cuba's intellectual and cultural elite. I meet Cucu Diamantes, the Grammy-nominated Cuban-American singer and actress, and her husband, Andrés Levin, a Venezuelan-born and Juilliard-trained American record producer and filmmaker who won a Grammy in 2009 for the *In the Heights* cast album. He spearheaded the inaugural TEDxHabana last November. Together, he and Diamantes founded the fusion band Yerba Buena, which earned a Grammy nomination for its 2003 debut album. Levin points out some famous Cuban actors and musicians. There are even a few members of the Castro family. A cloud of cigarette and cigar smoke envelops us all.

The U.S. embargo, which began in the early 1960s, prohibited American investment in Cuba. Art, books and



music, however, were exempt, giving artists the leeway to earn their money and travel outside the country, albeit under the watchful eye of the government. In a country where there are neither real estate tycoons nor hedge fund moguls, artists and intellectuals are among the 1 percent!

This is not the Havana most tourists see; nor is it the Havana most Cubans know. Even writing about it seems like something the Cuban government wouldn't approve of, because, well, viva la revolución, right?

For the rest of my time in Cuba, I see the Havana you probably see in your mind: The vintage Chevy convertibles with rusted tail fins; the propaganda posters that read "La Revolución es invencible" in faded red letters across buildings; the dilapidated mansions and rickety bicycle taxis; the cigar shops clogged with snowbird tour groups; and the kids who follow you around, ask where you live and, when they find out it's New York City, shout, "New York Yankeeessss!" (I didn't have the heart to tell them I grew up near Boston.)





*On a Sunday afternoon, kids walk by a Ché mural in Old Havana, on the side of the tunnel that leads to Havana's eastern beaches. They've just gotten off the bus from the beach. Credit: Lisette Poole for Newsweek*

At the same time, in a country where almost nothing has changed for generations, I found cranes erected across the city in preparation for renovations and construction. New paladares pop up almost weekly, as do small pizza shops. Hotels are filled with tourists; at Meliá Cohiba, where I stayed, I heard more American accents than I usually do walking down a random New York City street.

Now that the country is opening up for the first time in over five decades, hope, determination and money are in the air, and everything is up for grabs: real estate, construction, telecommunications, tourism. Small businesses, from bicycle and car repair to plumbing, restaurants and taxis, are all poised for growth. Netflix has announced it is coming, despite the fact that just **5 percent** of Cubans have Internet access, according to a 2012 Freedom House report. (Twenty-three percent of Cubans can access the government-sanctioned “intranet.”) In February, Conan O’Brien became the first late-night host to tape a show in Cuba since 1962 (the episode aired March 4). Which colossal American



brands are next? Home Depot? Best Buy? McDonald's? Royal Caribbean International? Donald Trump?

Cuba is suddenly brimming with potential, restrained by a tentative government and populated by hopeful, hardworking people. Who, exactly, stands to benefit and who could be left behind? Is Cuba's future a newfangled Jamaica, thronged by spring breakers, bachelors and bachelorettes wearing Che Guevara T-shirts and Castro-style Army caps? And is that a best- or worst-case scenario?

### The Art of Change

"I remember having my mom pick me up at school and say, 'We have 24 hours to leave. Pack a suitcase. We're going to be traveling outside of Cuba,'" Magnan says. "It was scary."

Forty-six years ago, Magnan's mother, an art professor, and his father, an accountant for a tobacco factory, left everything they owned in Havana—car, furniture, jewelry, possessions. Even then, Magnan was a collector: baseball cards, stamps, coins, stickers. "I loved to draw but was never pushed into the art field. The Cuban mother wants you to be a doctor or lawyer." Instead, he became an art dealer.





*Alberto Magnan observes Enrique Rottenberg's "La Fila" (The Line) at Havana's Fabrica de Arte Cubano (Cuban Art Factory) with a group of art collectors from the U.S. Magnan, as a collector that specializes in Cuban art, has been bringing American groups to Cuba for years. Fabrica is one of Havana's most popular nightlife spots complete with several dance floors, live music, and art gallery. Credit: Lisette Poole for Newsweek*

Magnan is known for showing Cuban artists like **Roberto Diago**, who explores race, religion and Afro-Cuban roots; **Alexandre Arrechea**, a founding member of the collective Los Carpinteros; and **Glenda León**, who represented Cuba in the 2013 Venice Biennale. His first time back to Havana, in 1997, was during Cuba's Special Period, the economic crisis that began with the collapse of the Soviet Union in 1991. Cuba lost billions of dollars in support and subsidies. There were shortages of everything: transportation, food, electricity, cars, replacement parts, toothpaste. Once-stunning homes started falling down, creating the kind of dilapidated beauty that fuels ruin porn. "I fell in love with the artists because what they were doing during the Special Period was very different. They had no materials. They were working with paints that were not paints. Canvases were metal or fabric or mops. They'd take everything they could

and make it into art. I said, ‘Oh my God, the U.S. collectors have to see what’s going on here.’”

Today, Magnan is behind some of the most innovative and controversial art events in Cuba, including **Chelsea Visits Havana** at the National Museum of Fine Arts in 2009, the first art exhibit of American artists in Cuba since the revolution. The event was part of the 10th Havana Biennial, which, despite its name, has occurred every three years since 2000. “That was a key turning point in Cuba-U.S. relations, when I realized art can make a difference,” Magnan says.

Over the past few decades, a handful of Cubans and Cuban-Americans have been working quietly as cultural ambassadors, building bridges between the two countries by focusing on the arts. Magnan is one of them. “Havana is alive and well,” he says. “Artists are doing incredible things. And they are choosing to remain in Cuba to pursue their careers.... The changes that are happening through art and culture are making the way for other changes.”

On our second day in Havana, we visit Cuban curator Juanito Delgado at his apartment overlooking the Malecón. It’s early evening as we gather in his living room, which is covered floor to ceiling with framed paintings and photographs. He leans back into a deep wicker couch, crosses one red velvet slipper over the other and says (through Magnan’s translation), “When you make good art, it poses all of the political questions. Don’t make politics art. Make art political. Then you have the dialogue.”





*Alberto Magnan and Juanito Delgado at Delgado's home in Havana which overlooks the Malecón, Havana's seawall. Delgado says it is the inspiration for his exhibition which takes place at each Havana biennial. Delgado curates the exhibition with several public installations and performance art; Magnan this year discusses installing a hockey rink along the seafront.* Credit: Lisette Poole for Newsweek

In 2012, Delgado transformed the Malecón into an art exhibit for the 11th Havana Biennial. Arlés del Río's Fly Away featured the silhouette of an airplane cut into a large, rectangular chain-link fence placed at the edge of the seawall. Rachel Valdés Camejo installed a large mirror facing the water; she called it Happily Ever After No. 1.

"Art moves society, and art moves people," Delgado says. "I hope Obama will help the cultural scene here, give funding to make books, do shows and help artists promote their work.... I want Havana to have its theaters filled." He pauses for a moment, then looks straight at me. "Bueno," he says. "Maybe you could find out where [the new money] is gonna go?"

### One Less Brick in the Wall

Cuba is just 90 miles from the United States, but it has been essentially frozen in time since 1959, when Fidel

Castro overthrew the dictator Fulgencio Batista with an army of guerrillas. Under Castro's Communist reign, education and health care were free but the economy crumbled, poverty spread, and Cubans were rarely permitted to travel abroad. Castro has a long history of punishing and repressing critics; in 2013, there were over 6,000 arbitrary detentions of human rights activists, according to the [Foundation for Human Rights in Cuba](#). Freedom of speech does not exist here, the state owns all official media outlets, and the government has intimidated bloggers and locked up journalists, who face gruesome conditions in prison.

Since 1982, Cuba has been on the U.S. government's [list](#) of countries that sponsor terrorism because, according to a [2013 State Department report](#), it has offered "safe haven" to members of the Basque Fatherland and Liberty (ETA), in Spain, and the Revolutionary Armed Forces of Colombia, and it also harbored fugitives wanted by the U.S. That designation prohibits Cubans from banking with America. While Barack Obama has promised to review Cuba's status, Republicans are protesting the potential removal.

In 2008, Fidel's brother Raúl took over. In the past few years, he has instituted a series of reforms that permit Cubans to travel abroad more easily and for longer periods of time; buy and sell cars and homes; legally start private businesses (with over 100 types); and stay at Havana's international hotels. (Historically, Cubans were shut out of high-end hotels, partly because they accept only the tourist currency, CUC (pronounced kook), and state workers earn their wages in the essentially worthless Cuban peso (CUP), and partly because the government didn't want the hotels to become hotbeds of drugs and prostitution.) While Raúl's policies have been applauded, the economic reality for most Cubans has not, since the majority can't afford to do any of these things.

"The reforms, even as reforms, are tepid, halting and partial," says Fulton Armstrong, who served as national



intelligence officer for Latin America from 2000 to 2004 and is currently a Senior Fellow at the Center for Latin American and Latino Studies at American University. “[When] you don’t have the influx of new capital, new trade, new money coming in, even if opportunities exist, the resources for using those opportunities do not exist.”



*A woman walks by a garage and barber shop on Neptuno Street, a major commuter street in Havana. Outdoor barbershops like this one are very common in Havana.* Credit: Lisette Poole for Newsweek

The average Cuban makes less than **\$20 a month**. Last year, some doctors reportedly got a pay increase from **\$26 a month to \$67**. In an appliance store I wandered into, a microwave was on sale for \$72.60, and a coffeemaker cost \$30. Most meals I ate were around \$30 a head. Now that Americans can send Cubans \$8,000 a year, up from \$2,000 before Obama’s December announcement, the gulf between blacks and whites is expected to widen. According to **The New York Times**, white Cubans are 2.5 times more likely than blacks to receive financial support from relatives abroad, making it easier for them to start businesses. White Cubans living in rural areas are also likely to struggle, Armstrong says.

There are 11 million people in Cuba, and many stand to benefit from the thawing of U.S.-Cuban relations: tradesmen, farmers, all those who receive remittances from relatives living abroad to enable them to open up small businesses. “The informal economy of Cuba is massive, and it’s been the training ground for large sectors of society to practice entrepreneurialism,” says Armstrong. “Some, like artists, have been doing it for decades, and they’re very good at it. People who’ve stayed on the straight and narrow, either because of personality or closeness to the party or institutional affiliation with tight oversight, haven’t engaged as much in the black market. Those people will have a slightly slower start.”

The losers, Armstrong says, are those who tend to lose everywhere, every time: the poorly educated, the elderly and those with health problems.

“Always, change is good for a group of people and bad for another,” says Meylin Bernal, 32, a tour guide with San Cristóbal, one of Cuba’s state-run tour companies. “Everyone is excited about having the chance to work and, according to their wages, be able to have a normal life. Not to struggle, but to survive.”





Credit:

### ‘The Sun Is Different Here’

“That’s a Muscovy. Russian! That black one is a Chevy, 1953. I used to own some of them.”

Raphael has been shouting the names of cars we pass as we drive through Havana. “That one over there, the green one, is a Chevy, ’52. That one is a Mercury, 1951. That’s a Dutch ’58. That used to be a Shell gas station before the revolution.”

We’re heading to Párraga, a poor neighborhood on the outskirts. It’s about a 30-minute drive, so to pass the time, I ask him why he decided to stop working as a doctor. “The wage was not enough!” he says. Raphael says he earned between \$12 and \$15 a month. (Today, doctors earn four times that, he points out.) As a taxi driver, he earns about \$200 a month, which helps him support his family. “At the beginning, I missed my work as a doctor, but now it’s so many years working as a taxi driver—”

He trails off.

“Juan Carlos just graduated dentist university in July,” Raphael says of his 24-year-old stepbrother. “He worked two days for me and made \$30 a day—more than he makes in a month. It’s awful. Juan Carlos would like to go to the U.S. He’s studying English. I’ll send him some money to help him. There’s no future for him here.”

We pull over on a quiet street and pick up Sandra Soca Lozano, a 28-year-old Cuban psychology professor at Havana University who has agreed to spend the day with me. Lozano is short, with long brown hair, big brown eyes and a friendly smile. She lives with her mother, a psychologist, and father, who’s retired, and her grandfather. She’s never left the island. “Because I love my country and I love my parents and I’m an only child, I don’t want to leave them behind,” she says.

When Lozano is not teaching at the university, she volunteers with children and teenagers who have cancer. But like other Cubans who opt to keep their government jobs, she makes a measly income—just \$30 a month. (“Every Cuban does the black market to make purchases and earn money,” says Armstrong, “because obviously the \$30 income is not her only income. Don’t kid yourself.”)





*Children play on the street in Centro Havana at sunset on March 3, 2015. Children play outdoors often in Havana, escaping hot and overcrowded homes. There is little in the way of computer games and technology keeping them indoors, and family and neighbors are always present; streets in Cuba are safe for kids.* Credit: Lisette Poole for Newsweek

Lozano longs to buy a car and go salsa dancing with her friends, but both are luxuries beyond her means. The challenges of daily life are compounded by watching her peers succeed abroad. “Lots of friends live outside of Cuba, and after four months they have cars! And they have houses! They can go on vacations wherever they want. My parents, who work like hell, cannot do regular stuff. My mother can’t go to Egypt and look at the pyramids.”

We continue driving, past abandoned gas stations, bus stops teeming with people and an old port without boats. I ask Lozano what it is about Cuba, aside from her family, that keeps her here. “It’s the people, the places,” she says. “Structurally, the streets suck and the buildings—I know that. But the smell from the sea! I’ve always lived near to the sea. This is a particular smell that I love. The sun here is different. You can always find someone who’ll help you, who’ll share with you.”

“Oldsmobile, 1955!” It’s Raphael again. He explains that we’re driving through a neighborhood called Luyano. We pass people sitting on stoops or standing on sidewalks waiting for a communal taxi. A large sign that says, “Gracias Fidel” hangs from a bridge.

Eventually, the streets get rockier. After a few more turns, we end up on a wide, pothole-ridden street devoid of cars and covered in trash. People are hanging out in the streets, and dogs roam the sidewalks as if they own them. Aluminum sheets serve as fences around tiny houses that are nestled up to each other like sardines. This is Párraga. There is no tourism here, and the water doesn’t run every day. A friend suggested we spend some time here, and introduced me to someone who might offer a window into what life is like on this side of the city.

Justina Cordero Mesa greets us on her porch, stretching her thin, wrinkled hands out toward mine and kissing me on the cheek. She’s wearing a white print dress, dark green socks and black flip-flops. Her white hair is clipped in a messy twist on top of her head, and fluffy white eyebrows hang over her eyelids. Her face is marked by deep creases. She’s 90.

Mesa waves us into her home and points to the couch and a couple of chairs covered in brightly colored pillows. Lozano, Magnan and I sit down. It’s a tiny space, not more than six by eight feet. Cracks and stains line the pale mustard walls and tiled floor. In one corner, a tiny Christmas tree and a boombox sit on a small brown table. On another table are a vase of fake flowers, a green piggy bank and a couple of other miniatures. Hanging above the table is a framed photo of Fidel Castro. Outside, dogs are barking.

In a raspy voice, Mesa tells us her television was recently stolen when someone broke in through the window. When I ask if the culprit was ever found, Mesa laughs.

Her home is small, dark and filled with flies. Behind the living room is a small dining room with a wooden table and



short refrigerator covered in vegetable-shaped magnets. In the even-smaller kitchen, old buckets and some cups and bowls sit on a makeshift countertop. There is a plate of what looks like chicken bones near a hot plate, and four cooking utensils hang from the pale blue wall. The ceiling is low, not just here but in all of the rooms. A small door in the kitchen leads to a back alley, where Mesa hangs her clothes and washes her dishes.



*Justina Cordero Mesa, 90, in her home in Parraga, Havana, February 21, 2014, before her television was stolen. Mesa says of the Fidel photo on her wall that her late husband was a police officer, working for the government, he revered Fidel and placed his photo on the wall years ago. Now she says, “it just stayed there.”* Credit: Lisette Poole for Newsweek

“My grandson wants to take his house and this house and trade them for one bigger house, so that I can live with him. But I don’t know,” says Mesa, who has lived here for more than 60 years. Her husband, who worked for the police, died a few years ago. They have one son, who lives in Cuba, and her sister and niece live in the U.S. “My sister wanted to take me, but I didn’t want to leave. I have my family.... My history is big. But what am I going to do with that?”

I ask Mesa if she thinks life in Párraga will get better now that the embargo has been lifted. “It hasn’t changed. Every day it’s worse, because everything is more expensive,” she says. “I can’t hear or see well. I’m very old. I’m really old. Whatever I’m gonna see now I’ve already seen.”

When I return to New York City, I email Lozano. She says it was “hard” to see how Mesa lives. “On the other hand, she represents exactly what I think it is to be a Cuban, because even living in those conditions she would never leave her country. She loves it. She hopes for good things for others and not for herself. She offers the few things she has, and she is old but still...independent and she still cares of her family.... For me that’s the essence of the Cubans—always take care and worry for someone else, always resilient, always helping the other, even if you don’t know him too much.”

‘Will They Beat Up People?’

Vedado, an urban center in Havana where Hugo Cancio has been slowly growing his media empire, is a long way from Párraga. Cancio, who’s Cuban, is the founder and CEO of Fuego Enterprises, which focuses on business, media, telecommunications, real estate and travel opportunities in Cuba and the U.S. A few years ago, he and his wife were on a flight from Miami to Havana along with about 40 Americans. He overheard some of them talking about what Cuba is all about—“other than that famous last name that starts with a C,” he says.

“Is Cuba a militarized country?”

“Will we find people with machine guns in the street?”

“Will they beat up people who say bad things about Fidel?”

“My wife said, ‘Why don’t you get up and tell them what Cuba is all about?’” Cancio recalls. “I was getting pretty upset, because as you can see, this country is about more



than Castro and the dissidents and the opposition. It's a beautiful country with beautiful people. I approached them and started talking to them about Cuba."

Twenty minutes later, he returned to his seat. His wife had an idea: print a brochure about Cuba, to be given to tourists on flights to Havana. "Do something!" he remembers her saying.



*Early morning on Infanta Street in Centro Havana. The pink house on the right is newly painted, in Havana one sees many homes painted alongside ones that aren't. Cubans are almost exclusively owners of their homes and responsible for maintenance. Paint is expensive and hard to come by. In this way, painted homes are becoming an indicator of haves and have-nots. Credit: Lisette Poole for Newsweek*



Instead of a brochure, Cancio launched **On Cuba**, the first Cuba-focused bilingual magazine, which is sold throughout the U.S. and Cuba. Its website gets between 600,000 and 1.2 million visitors a month, and the magazine and its sister publication, **ART On Cuba**, which Cancio launched last June, are sold in all U.S. Barnes & Noble stores and all Hudson News shops at Miami International Airport and Ronald Reagan National Airport in Washington, D.C. This month, the magazine goes into 184 Publix supermarkets across Florida. And in a nod to his wife's original idea, On Cuba is the official in-flight magazine on most charter flights between Miami and Havana.

Cancio, 50, was born in Havana. His mother, Monica Leticia, was a famous Cuban singer, and his father, Miguel Cancio, co-founded the legendary Cuban quartet Los Zafiros (the Sapphires), affectionately referred to as the Beatles of 1960s Cuba. During the famed 1980 Mariel boatlift, when Castro announced that anyone wanting to immigrate to the U.S. could leave the country, **125,000 Cubans fled on 1,700 boats**. Cancio, then 16, left with his mother and 13-year-old sister. Not long before, he'd been expelled from his prestigious high school for making a joke about Castro. "My mother said, 'You have no future here,'" Cancio recalls. "We gotta go."

With no relatives in Miami and nowhere to go, they spent three weeks in a shelter at the Orange Bowl stadium. Later, they moved to a tiny studio in South Beach. "My mom slept on a sofa bed, and I slept on the floor on a mattress for three years. She regretted her decision for many years."

Back in Cuba, Cancio's father had been working with the Ministry of Culture's Centro Contracciones, but he lost his position for permitting his family to leave. He got a job as a street sweeper and later worked in construction. "I'm the only construction worker who goes in a three-piece suit to work," Cancio recalls his father writing in letters. A few years later, he, too, left the country.

Today, Cancio is a pioneering ambassador for Cuban music and art in the U.S., especially in his hometown of Miami. He has produced nearly 140 concerts and 30 music tours, and his résumé reads like a primer of the Cuban-American culture wars. In 1999, he planned a concert at the Miami Arena for Los Van Van, one of the most successful Cuban musical groups. “Right-wing Cubans were outside throwing eggs and cans, and their sons and daughters were inside dancing,” he recalls.

Cancio was also behind the **first Cuban-American** feature film produced in Cuba since before the revolution, *Zafiros, Locura Azul* (Blue Madness), about the rise of Los Zafiros. The film premiered in 1997 at the Havana Film Festival, where it won the people's choice award and then ran in theaters for six months. When he brought it to Miami, thousands of protesters rallied outside the theater. “My mom had brought me to this country to be a free man and to have a better future,” he says. “How can you prevent me from doing something I have every right to do in a democratic country your parents brought you to because in Cuba you couldn’t do anything?”

With U.S.-Cuban relations changing, Cancio is expanding the On Cuba footprint. In March, On Cuba Real Estate will arrive, focusing on architecture and local neighborhoods. This spring he’s launching On Cuba Travel, a Travelocity-type website focused on Cuba, and, later, On Cuba Money Express, a money remittance business. He’s also partnering with two large telecommunications companies in the U.S. (Blackstone Online is one; he declines to name the other) in an effort to bring the Internet and cellphones to the Cuban people.

“I have been fighting for this for many, many years—not defending the government but defending my right as a Cuban to change U.S. policy towards Cuba, which was inhumane and didn’t work, as President Obama said,”



Cancio says. “All of that combined has given me some credibility in Cuba.”

Who, exactly, stands to benefit from all of the work he’s doing? I tell him about Lozano, the psychology professor, and Mesa, and ask him what he thinks their futures will look like.

“I’m concerned the first people that will benefit will be the well connected,” he says. “It will be a lengthy process, but we are breathing a different air. I see it in my people who work for our publication. I’ve seen the transformation from when they started working with us to how they are today. They’re happier. Their houses are being rebuilt. They’re thinking of putting a little money aside to take a trip to Mexico or Honduras.”

The On Cuba office is empty when I visit on a Saturday, save for the editorial director, Tahimi Arboleya. She’s sitting at a desk in one of the offices, surrounded by a few computers. On her desktop: Gmail and Facebook. It’s the first time I’ve seen those websites during my entire trip. It’s also one of the few times I’ve seen working computers.



*Sun sets on the night of December 17, 2014. The day that Raul Castro and Barack Obama announced the US and Cuba would restore diplomatic relations. Since then, life on the island is much the same, many locals feel the changes will take too long or not reach them at all, while internationally, news is teeming with the changes in policy.* Credit: Lisette Poole for Newsweek

“I think that we can do something. A little, you know?” says Arboleya of her work at On Cuba. “It’s very, very important to us to inform Cubans and Americans [about] what happens in Cuba, what is the reality of the Cuban people. The information about Cuba in the United States is very—I don’t know how to say in English—polarizing?”

My last night in Havana, I invite Lozano to join Magnan, me and a few others for dinner. At first, she isn’t interested. She’s supposed to meet up with some friends to go salsa dancing, which she hasn’t done in weeks, but after making a quick stop at the salsa club and finding out it’s full, she decides to join us. Raphael drops us off near the water in the Miramar section of Havana. A bouncer stands at the foot of a walkway leading up to an imposing white house. He and Magnan talk—it looks as if they know each other—and then



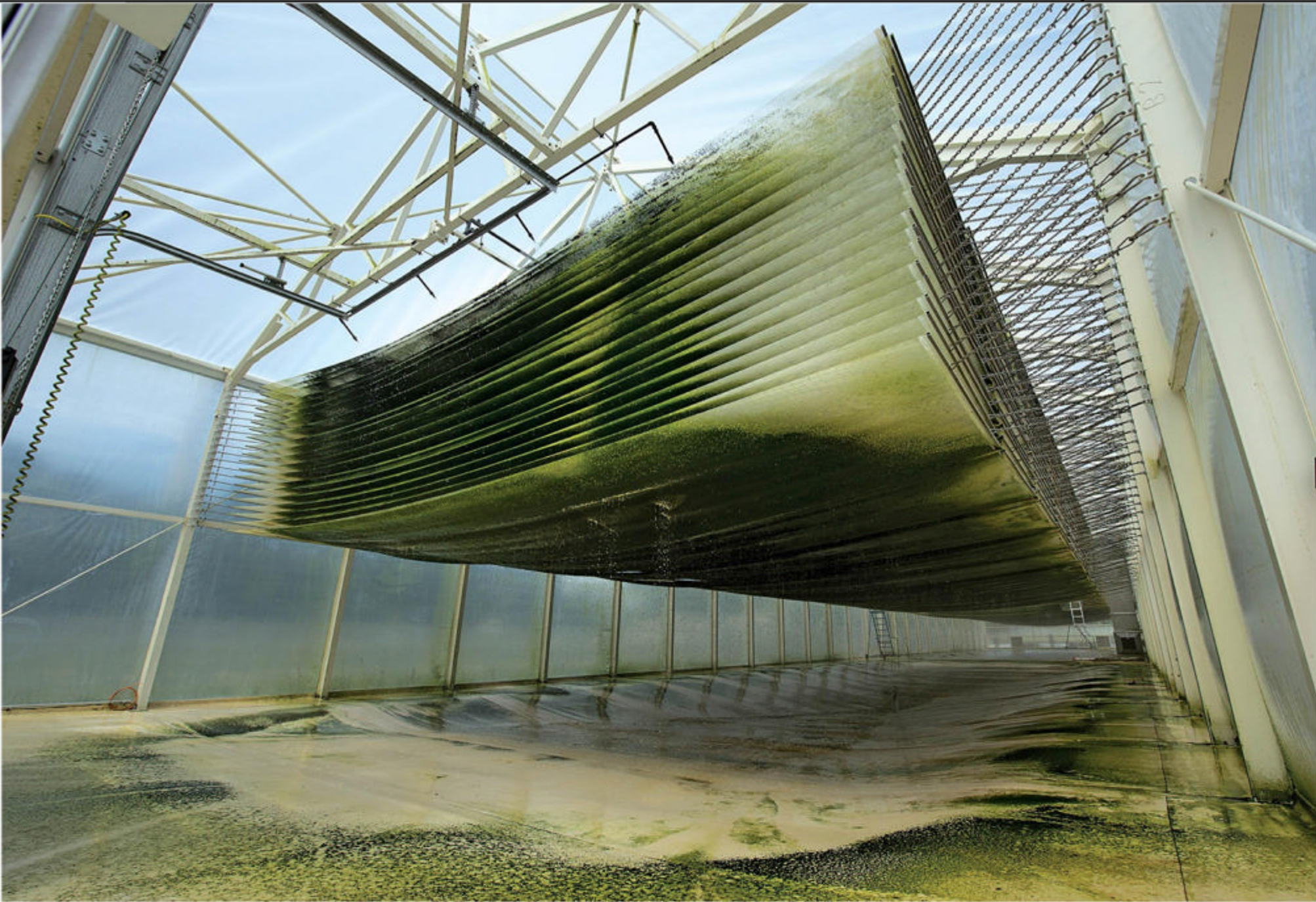
we head into Rio Mar, a seafood paladar overlooking the Almendares River.

We sit at a long table on the terrace, beneath a navy blue awning. All around us are tables of tourists: Americans, French, people speaking Spanish and more Americans. White Christmas lights hang from the balcony, lighting up the clear glasses and bottles of Acqua Panna. Lozano keeps commenting on how clean the water tastes. She'd never had blue cheese before, so she orders chicken breast in blue cheese sauce. Before dessert arrives, she disappears inside and takes photos in the restaurant's lobby, posing on a couch with one of the waiters.

"That place, it's kind of magic. I felt like I was move to another country or time," she says later in an email written in nearly perfect English. "[It] makes me nostalgic of my future, of my parents, of my family to be, of my country.... But I know that in the current situation of my country's economy, and the struggles of my government to keep public systems like health and education with quality, working in my field (education) will never allow me to go by myself to places like that. I will always have to wait to be invited by someone else."

In Cuba, she says, "there are lights and shadows everywhere and you can choose what to show, but most important for me how to show them both."





Matthias Balk/picture-alliance/dpa/AP

# *THE PROMISES AND PERILS OF SYNTHETIC BIOLOGY*

**SYNBIO WAS GOING TO SAVE THE WORLD. NOW IT'S  
BEING USED TO MAKE VANILLA FLAVORING.**

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A mile from the Mexican border, on a patch of scrubland where the Chihuahuan Desert meets the low-slung mountains of New Mexico, lies \$104 million worth of government investment in the form of 78 concrete pits.



In January, Mike Mendez, a 52-year-old scientist with parted hair and a weakness for cowboy boots and sweater vests, rented a car and drove the two hours from El Paso International Airport to this parched corner of the Southwest. He had spent five years of his life thinking about these pits, but still he'd never seen them in person.

Situated 10 miles outside of Columbus, New Mexico, population 1,628, the pits and the high-tech machinery around them were built by Sapphire Energy, which Mendez co-founded in 2007. The whole operation was the product of \$85 million in funding from wealthy investors like Bill Gates, \$50 million from the Department of Energy, \$54 million from the Department of Agriculture and the technical know-how of some of the smartest minds in the biotech industry. The idea behind the venture was radical: Use synthetic biology, a promising new technology that lets scientists reengineer the genetics of living organisms, to take on the fossil-fuel industry—and do the whole thing with pond scum.

The company spent years unraveling the genetic pathways and manipulating the DNA of various types of algae and eventually engineered a handful of specimens that produced biofuels ready to be pumped directly into your gas tank. Sapphire called it “green crude,” and the company had proved it could power all sorts of vehicles, from Boeing 747s to Priuses. The pits—or “ponds,” in industry parlance—were built to house fantastic amounts of this biofuel-producing super-algae—enough to make a million of gallons of clean fuel. Enough to show the world that Sapphire's fuel was a scalable, viable alternative to the conventional crude whose use is rapidly warming the planet and raising sea levels.



*Research associate Emma Valdez checks on bottles of algae being cultivated for bio-fuel research at the Sapphire Energy Inc. facility in San Diego, Calif., March 26, 2012. Sapphire Energy cultivates algae to create crude oil that can be processed in existing refineries into jet fuel, diesel and gasoline. Credit: David Maung/Bloomberg/Getty*

“I can’t believe the amount of money and amount of effort put into this,” Mendez marveled as he pulled up to the Green Crude Farm and got out of the car. It was an intoxicating endeavor, and a lot of people bought into the dream. **Businessweek** named Sapphire one of the hottest startups of the year in 2008, as did **The Wall Street Journal** two years later. Other synthetic biology (synbio, for short) companies cropped up with similar biofuel plans, and investors poured hundreds of millions of dollars into the field. “Designing and building synthetic cells will be the basis of a new industrial revolution,” Craig Venter, one of the fathers of modern synthetic biology, told **The New York Times**. “The goal is to replace the entire petrochemical industry.” By 2018, Sapphire announced, the company would make 100 million gallons of fuel in its massive desert ponds; by 2025, they could produce a billion.



“I started Sapphire a long time ago, and we had a vision of a giant algae field you could see from space—and now I’m looking at it,” Mendez told me after the trip. “It’s the first time I see it. I’m in awe. Then I notice all the tumbleweeds.”

## GMO 2.0

When the bottom fell out of the energy market during the Great Recession, it took much of the nascent synbio biofuel industry with it. Competing with \$140 barrels of oil was one thing, but \$50 was untenable. “Fuel is the cheapest stuff on the planet,” says Jamie Bacher, a former Sapphire employee who went on to manage a joint venture between Amyris, one of today’s biggest synbio firms, and Total, the French oil giant. “Colloquially, you say, ‘Oh, oil is really expensive these days.’ But even at \$100 a barrel it’s cheaper than bottled water.”

Oil and gas companies make pennies on the barrel—their profits come from producing billions of gallons. Sapphire, like the other giants of the heady days of the synbio boom in the late aughts, struggled to scale up to a level where it could get its prices down to compete with newly cheap oil and natural gas. So instead, many of the synbio companies attempted to sell their higher-priced product as a luxury good, to a market willing to spend a little more in the effort to save the world from climate change. Critics say this business model was doomed to fail. “Idealism is never a good idea in business,” says Mark Bünger, a research director at Lux Research who focuses on synthetic biology and clean fuel. “Unless you can translate your idealism into sustainable economics, you’re a charity and you need to have other sources of funding.”

“I think everyone was drunk on the money coming into the space and drunk on the dream,” Mendez says now. He left Sapphire in 2011; his visit to the company’s New Mexico facility in January was to advise executives on what to do next, before the cash runs out. Sapphire is not alone

in these dire straits. LS9, one of the first biofuel companies of the synbio era, which boasted partnerships with Chevron and over \$80 million in funding, was sold for a paltry \$40 million in February 2014. The stock value of Amyris, which kicked off investors' fevered interest in synthetic biology when it created an anti-malarial drug in the lab and then moved on to biofuels, dipped below \$2 in February—down from a high of over \$33 four years earlier. And a much-heralded \$600 million investment by Exxon Mobil into a San Diego synbio firm—co-founded by Venter—ended in failure, layoffs and a **declaration from** him that biofuels “are just dead.”

But this isn't simply another tech boom and bust; the possibilities of synbio, from novel medical applications to increased agricultural yields to bringing extinct creatures back to life, are myriad and enthralling. If the first big synthetic biology companies fail, it will have broad implications for the field and clean energy. “All the technology and all the promise and the possibility of someday having carbon-neutral fuels” will disappear, says Jay Keasling, head of the Joint BioEnergy Institute, a Department of Energy research center and a founder of both LS9 and Amyris.





*J. Craig Venter sits in a greenhouse at his company, Synthetic Genomics, in La Jolla, Calif., July 14, 2010. Credit: Sandy Huffaker/The New York Times*

Luckily, as it turns out, “there are easier products to make money from than fuels,” says Sapphire’s new CEO, James Levine. Using the technology platforms already built for fuel, the giants of the synbio business are turning hard—or “pivoting,” in Silicon Valley tech-ese—to products that sell for much more than \$2.49 a gallon. Evolva, a Swiss firm with offices in the San Francisco Bay Area that was founded to make unique cancer drugs and antibiotics, is making vanillin (vanilla extract), stevia and saffron. Amyris, the company that created the revolutionary synbio anti-malarial drug and then tried its hand at fuel, is manufacturing lotions and fragrances for perfumes. And Sapphire, with its advanced algae and vast ponds, is eyeing omega-3 supplements.

If the dream of producing massive amounts of clean fuel is to survive, the synbio business needs “wins,” supporters say—even if a “win,” in this case, is something like synbio saffron. A product made by genetically modified organisms in a laboratory, it could end up in our food without any

labeling, and it infuriates environmental groups. Those groups are already gearing up for a very public fight over what they've dubbed "GMO 2.0."

So, in other words, the fate of one of the most promising technologies of the 21st century may come down to paella.

### A Higher Smoke Point

The walls in the lobby of the South San Francisco offices of Solazyme, one of the biggest biofuel companies of the synbio boom, are lined with photos of Navy ships cruising the open seas, powered by the company's algae marine diesel. Next to a particularly impressive destroyer, there's a photo of a slightly befuddled-looking Arnold Schwarzenegger, then-governor of California, chewing on sugar cookies made with algae-derived ingredients.

In a conference room upstairs, Walter Rakitsky, the senior vice president of emerging business, tells me how in 2008, while the company was still focused on creating fuels from algae, someone decided to bake a cake with some algae oil. Rakitsky and others realized the potential quickly. The process of making food oils wasn't too different from making diesel, and with their technology, they could make food oils that were lower in saturated fat than, say, olive oil, or came with a higher smoke point. They could also produce something very similar to palm oil, which they say is an excellent alternative to the real stuff, often grown and refined in harsh conditions. Downstairs, in a shiny test kitchen, chefs in white coats offer me disconcertingly tasty ice cream and cookies and crackers made from the algae products.

Solazyme doesn't call itself a synthetic biology company anymore—it prefers "21st century oil company" these days. This is telling for a few reasons. First, there is no accepted definition for what synthetic biology is. (When I asked Drew Endy, a respected synbio evangelist at Stanford, he joked, "I know it when I see it.") But Keasling's definition is simple

enough: “It’s about engineering biology to do useful things for us,” he says.

In practice, it works something like this: Scientists go to the lab bench and analyze the genetic pathways of algae, yeast and other organisms that can be coerced into making some byproduct. Algae, over the course of millions of years, naturally creates crude oil; yeast, of course, makes things like beer with relative ease. When researchers find a promising genetic direction, they can alter the organism’s DNA to speed up the process.

Using this technology, synbio companies can tailor products to the food and chemical industries, which are thrilled at the prospect of cheap flavors and foods that come with reliable supply lines and shelf stability. Evolva focused on making therapeutics until 2009 but realized there was more money in the food business. In December, it bought Allylix, a San Diego–based synbio company focused on biofuels and flavors. Today, Evolva is producing synbio versions of stevia, the popular sugar replacement; vanillin, the extract that sweetens about 99 percent of the “vanilla flavored” foods we eat; and saffron, the world’s most expensive spice. Neil Goldsmith, the company’s Oxford-educated CEO and founder, is candid when I ask why Evolva decided to make synthetic saffron. “Because it’s really dear and because the supply chain is so dodgy,” he says. In other words, there’s lots of money to be made.





*Junji Yamamura, a researcher at IHI NeoG Algae LLC, checks the Enomoto Algae in the IHI NeoG Algae LLC research facility in Yokohama City, Kanagawa Prefecture, Japan, on November 7, 2012. Credit: Noriyuki Aida/Bloomberg/Getty*

## As Deep as Religion

There will be challenges, though. Last year, environmentalists and farmers gathered in Berkeley, California, for an event called “GMOs 2.0: Synthetic Biology, Food and Farmers.” It was ostensibly a panel discussion, but in effect it was an effort to sound an alarm about the perceived dangers of foods derived from synthetic biology.

“There’s a new synthetic ingredient we need to be aware of—a new product coming straight out of a petri dish,” said Dana Perls, a staffer at the environmental group Friends of the Earth. “An extreme form of genetic engineering,” she warned the audience.

The environmental groups’ concerns about synbio food aren’t just limited to eating products made by genetically modified organisms. The panel told the rapt audience of students and gray-haired locals that the new technology

could disenfranchise people across the developing world. By producing, say, vanillin in a lab, synbio companies would put vanilla farmers in Mexico out of business, they argued. “These products threaten the livelihood of small farmers and people working on sustainable agriculture across the world,” Perls told the audience. (Evolva disputes this and says its synthetic vanillin will compete against vanilla extract products, not natural vanilla.) Plus, the panel alerted the audience, ingredients made with synthetic biology do not have to be labeled if they’re included in food products, and since they’re created by living things—yeast or algae—they can still be labeled “natural.”

The next week, a very different kind of synbio meeting was held across the Bay in a brick-and-timber warehouse in San Francisco, complete with sweeping views of the water. This time, synthetic biology executives and insiders were gathered to discuss the potential PR pratfalls that could affect the industry as it wades into the food space. Participants raised the specter of Monsanto’s prolonged, public battle with anti-GMO activists; the folly of Olestra, the non-fat additive used in chips in the 1990s; and the foolishness of their industry’s key term.

“Synbio, within the academic and research community, is a really cool phrase,” one speaker said. (To ensure everybody would speak their minds, the event was held under “Chatham House Rule”—everything said was on the record for future publication, but the speakers would remain anonymous.) “Whereas, within the food sector, synbio couldn’t be a worse term...you say ‘synthetic’ and people think artificial, fake.”

The strong animosity environmentalists feel toward synbio and genetically modified food was dissected at length, too. “I think we need to think a lot about the fact that the opposing people have sort of a religion,” one person said. “It’s as deep as religion or patriotism. It’s really hard to shake.” It’s a problem that was borne out in research

undertaken by Todd Kuiken, a senior program associate at the Wilson Center in Washington, D.C., in 2013 and 2014. In focus groups, responders were largely in favor of synthetic biology tackling medical problems and clean biofuels, but when it came to food, 61 percent of respondents had negative views on using synbio to create food additives. Indeed, Friends of the Earth has already capitalized on this unease. Along with other environmentalists, it was able to pressure Häagen-Dazs into agreeing not to use synbio vanillin in its ice cream. Ecover, which owns the Method line of green cleaning products, caught so much flak for using synbio technology to create its “natural” detergent that it now denies synbio is involved in the production process at all.

“How do we explain scientists’ motivations?” one person asked. “Most of us are not evil geniuses.”

“We haven’t had an iPod of food tech—something that really captures the consumers,” another lamented.



*New strains of yeast are tested at the Amyris yeast fermentation room in Emeryville, Calif. before going to large production facilities in Brazil, October 23, 2013. Credit: Peter DaSilva/The Washington Post/Getty*



## Still Want to Change the World

A year and a half ago, Mike Mendez founded a synbio company, Pareto Biology, with Jamie Bacher and a few other scientists. Pareto is based in San Francisco, but Mendez works in a small lab just north of San Diego, at the Salk Institute, a famed research facility with the kind of ocean view millionaires sue each other over.

Pareto is focusing on high-value molecules. Mendez and Bacher won't say which, but the list includes flavors and other things people will eat. Their business model is the opposite of the old-model big synbio companies: Focus on the expensive stuff, don't try to change the world. Companies come to them and, for a fee, Mendez manipulates cells in the back of their lab, optimizing a molecule or creating a new one for them. "We're not painting the big dreams anymore," he says, laughing. "The lessons have been learned."

But the two haven't let go of what brought them to the field. "Synthetic biology needs wins. I think we, as an industry, are poised for that. I'm extremely confident that's going to happen," says Bacher. "The question is: Where does it lead to?" I ask him if he's talking about clean fuels—about once again trying to revolutionize the energy industry. "Fuel is part of the long-term dream," he adds cautiously, emphasizing the "long-term" part of that sentiment. But Mendez is more open about his struggles.

"I wanted to change the world, change the energy sector," Mendez says. "And now we're using the platform to make omega-3s. What's that going to change? That's a steep fall from grace. I think that's the scientist-dreamer in me. The MBA in the room says there's no shame here, we're gonna make money. And I'm embracing it because I see the long-term play. Because if we can make money, we can stay alive and there's a chance we can be there when we're needed."

“So I’m tempted. It’s a drug. Maybe I need another shot of it.”

This article was reported with support from the [UC Berkeley-11th Hour Food and Farming Journalism Fellowship](#).



Mahmud Hams/AFP/Getty

# *EXILED IN ABU DHABI, MOHAMMED DAHLAN DREAMS OF GAZA*

**THE FORMER PALESTINIAN STRONGMAN WANTS TO  
BECOME THE NEXT PRESIDENT OF PALESTINE.**

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No place in the Arab world could be more different from the Gaza Strip than Abu Dhabi. The affluent emirate on the Gulf has shimmering skyscrapers, a Grand Prix racetrack and **its own Louvre**. Yet Mohammed Dahlan, the 53-year-old Gaza native and exiled political leader, seems



comfortable here. His home is a glossy mingling of marble and glass, with chandeliers hanging from high ceilings and framed paintings on the walls. On a sunny winter day recently, he worked in his garden dressed in jeans and soft loafers, then greeted me on his waterfront patio.

But for all its luxuriousness, Abu Dhabi is only temporary, Dahlan says—a staging area where he now plots his comeback. He’s lived in this city for four years, ever since Palestinian President Mahmoud Abbas expelled him from the governing Fatah party and charged him with corruption and defamation. The rift between them cut short a political career that seemed brimming with promise. Over a 20-year period, Dahlan served as the powerful security chief of Gaza, an adviser to Yasser Arafat, a negotiator with Israel and Abbas’s minister of interior. Now he’s trying to succeed his rival and become the next president of Palestine. “I have a nice life here, but believe me, my heart is there,” he tells *Newsweek*. “If there’s an election tomorrow, I’ll go back.”

Though elections aren’t expected anytime soon, Dahlan’s maneuvering is getting attention because of a larger question troubling people both in the Palestinian territories and abroad: How much longer can Abbas hold on? The Palestinian leader, who took over after Arafat’s death in 2004, turns 80 next month. He’s a heavy smoker and has a history of medical problems, including cancer. Yet he’s never named a deputy and has no natural heir. For Palestinians, that adds another layer of uncertainty in an existence rife with it. For the U.S. and Europe, it raises the possibility of a political vacuum, one that Hamas, the Islamic Palestinian organization, could exploit in order to extend its rule from Gaza to the West Bank.

In his interview with *Newsweek*, Dahlan positioned himself as a counterweight to Hamas, one of the few political figures with enough clout and muscle to defeat the Islamists. He made clear that he was using money and political connections—two resources he seems to

have in abundance—to regain relevance in the territory he left behind. “The Gazan people are victims of Hamas, the Israelis and Abbas,” he says. “They all talk about the suffering of the people, but none of them are doing anything.”

For the past year, Dahlan has been raising money in Gulf countries and distributing it to needy Gazans, in part through a charity run by his wife. He’s also been pressing Egyptian President Abdel Fattah el-Sissi to open the border between Gaza and Sinai so that Palestinians can get some relief from the punishing Israeli cordon. When Egypt did just that recently (though only for a few days), Dahlan took credit on his Facebook page. “The opening of the Rafah crossing...is a first step in a series of measures adopted by the Egyptian leadership during my recent visit to Egypt and meant to ease the burden on our people,” he wrote. The Egyptian government did not comment in time for publication.

Whether Palestinians are willing to embrace Dahlan is far from certain. His critics portray him as a political thug who jailed opponents and enriched himself through kickbacks from big financial deals between Israelis and Palestinians (he disputes the characterization). Others associate him with the Oslo peace accords of the 1990s, which raised hopes for greater Palestinian freedom and independence but delivered neither. While Dahlan still believes in the two-state solution, many ordinary Palestinians have simply moved on. Fifty-eight percent believe the idea is no longer practical, **according to a poll** published in January by the Palestinian Center for Policy and Survey Research.

And yet it would be a mistake to write Dahlan off. Among a handful of figures who are pushing themselves as presidents-in-waiting, he stands out for his charisma and political savvy. He has a cadre of loyalists in the Palestinian territories, many of them members of the security agency he once ran. **A rally they staged** in December in Gaza drew

several thousand people, a significant turnout in an area controlled by Hamas, where political dissent can sometimes be met with brute force. And while opinion polls have revealed no clear front-runner (except maybe for the long-jailed Marwan Barghouti), Dahlan's trend line over the past few months seems to be rising.

"There's a feeling that he's doing things for Gazans," says Nabil Kukali, who runs the Palestinian Center for Public Opinion, which conducts regular surveys in the West Bank and Gaza. "It's bringing him more support."

### In and Out of Israeli Prisons

For people steeped in the Palestinian narrative, Dahlan's life story has all the familiar plot points: displacement, resistance, soaring hope and crushing disappointment. The son of refugees from an area now part of Israel, Dahlan grew up in one of Gaza's poorest quarters and eventually joined the Fatah Hawks, a militant group that organized attacks against Israelis. He spent his 20s in and out of Israeli prisons, where he mastered Hebrew and came to be recognized as a prominent resistance leader. When the Palestinians launched their first uprising in the West Bank and Gaza in late 1987, Israel deported him to Jordan along with other organizers of the intifada.

Dahlan returned to Gaza triumphantly in 1994 with the implementation of the first Oslo agreement. In his exile, he had worked his way up the Palestine Liberation Organization's (PLO) hierarchy and grown close to Arafat, who tapped him to head the main security agency in Gaza. The PLO chief also gave Dahlan a role in the negotiations with Israel, which many Palestinians believed would culminate in statehood within several years.

By the mid-1990s, he was at the peak of his power. Dahlan's security force numbered 20,000 in Gaza, and his connections across the region made him an asset to both Israeli and American security agencies. President Bill Clinton, in his memoir *My Life*, described him as one



of “the most forward-leaning” figures in the Palestinian leadership. CIA chief George Tenet cultivated a personal relationship with Dahlan.

But the eroding peace process undermined his position. Hamas, whose suicide attacks killed scores of Israelis, accused Dahlan of jailing its activists arbitrarily and having them tortured in prison, a charge he denies. To other Palestinians, his cozy relationship with Israel and the U.S. came to be seen as suspect.

Dahlan blames Israel for wrecking the peace process through relentless settlement expansion in the Palestinian territories. “By their actions on the ground...they are killing the two-state solution,” he says, putting forth a view that the Israeli government rejects. But Dahlan also conceded there were Palestinian missteps. One of them was Arafat’s rejection of the Clinton peace plan in late 2000, a proposal that offered Palestinians statehood in more than 90 percent of the West Bank and Gaza Strip. “It was a mistake,” he says, “not to accept it.”



*Palestinians await permission to enter Egypt as they gather inside the Rafah border crossing between Egypt and southern Gaza Strip on December 21, 2014. Egypt opened the Rafah border crossing allowing Palestinians from Gaza Strip to travel in and out for the first time since the passage was closed on October 25. Mohammed Dahlan publicly took credit on his Facebook page for the opening. Credit: Abed Rahim Khatib/Flash90/Redux*

### ‘Abu Mazen Hates Me’

The turning point for Dahlan came in 2007 when Hamas routed Fatah in a weeklong civil war in Gaza and wrested away control of the territory. The group had won a parliamentary election in the Palestinian territories the year before but faced international isolation and failed to consolidate political power. Though Dahlan was in Germany for knee surgery during the fighting, the defeat of troops he had commanded for years amounted to an embarrassing failure—compounded by the fact that many of them had been **trained by the U.S.** It also caused a rupture between him and Abbas, a quiet trading of accusations that escalated into a public feud.

In the years since, the row has grown increasingly rancorous, exposing a slice of ruling-class intrigue that usually remains hidden from average Palestinians. Abbas

fired Dahlan from the PLO's highest leadership body, charged him with stealing millions in public money and sent troops to raid his home in Ramallah. In a closed-door meeting last year, he suggested that Dahlan might have played a role in Arafat's death, though Abbas admitted he had no proof. The PLO chief died in a Paris hospital of unknown causes. Many Palestinians believe Israel conspired with collaborators inside Arafat's circle to poison him. Dahlan says he has his own suspicions about Israel, but laughs off the idea that he was involved in a plot there.

Dahlan has been no less sharp in his attacks against the Palestinian president. He told Newsweek that Arafat initially balked at getting treatment in Paris during the last days of his life because he feared Abbas would try to take over in his absence. Dahlan also raised questions about the finances of Abbas's two sons, both businessmen who have **won U.S. government aid contracts** for work in the West Bank during their father's time in office. "Because I know the facts, Abu Mazen [Abbas] hates me. I understand that, by the way. But it doesn't give [him] the right to claim that I'm corrupted like [he is]."

In response, an official speaking for Abbas denied any wrongdoing and said Dahlan is trying to deflect attention from his own misdeeds. He said the allegation that Arafat feared a takeover by Abbas was "not even worth a reaction." Regarding Abbas's sons, the official said Dahlan's insinuations reflected his vendetta against the Palestinian leader and nothing more.

What do Palestinians make of the dispute? Ghassan Khatib, a former member of Abbas's government who now teaches politics at Birzeit University near Ramallah, says the smearing and counter-smearing has been so salacious, it's hard for people to turn away. But he believes that a plain old power struggle lies at the core of the conflict. "The accusations have become irrelevant because there's no way



to verify what's right and what's wrong," he says. "It's a competition over...authority, over roles and responsibility."

### 'It's Just an Excuse'

Whether Dahlan can return to the West Bank and Gaza, much less participate in elections, is now in question. A Palestinian court convicted him in absentia last year of defamation (he alleged in an interview that Palestinian security forces help protect Israeli settlers in the West Bank) and sentenced him to two years in prison. In a second trial, now under way, he's accused of stealing \$17 million in public funds. Dahlan has hired a French lawyer to fight the charges but says the courts are tools of the regime and insists their verdicts are irrelevant.

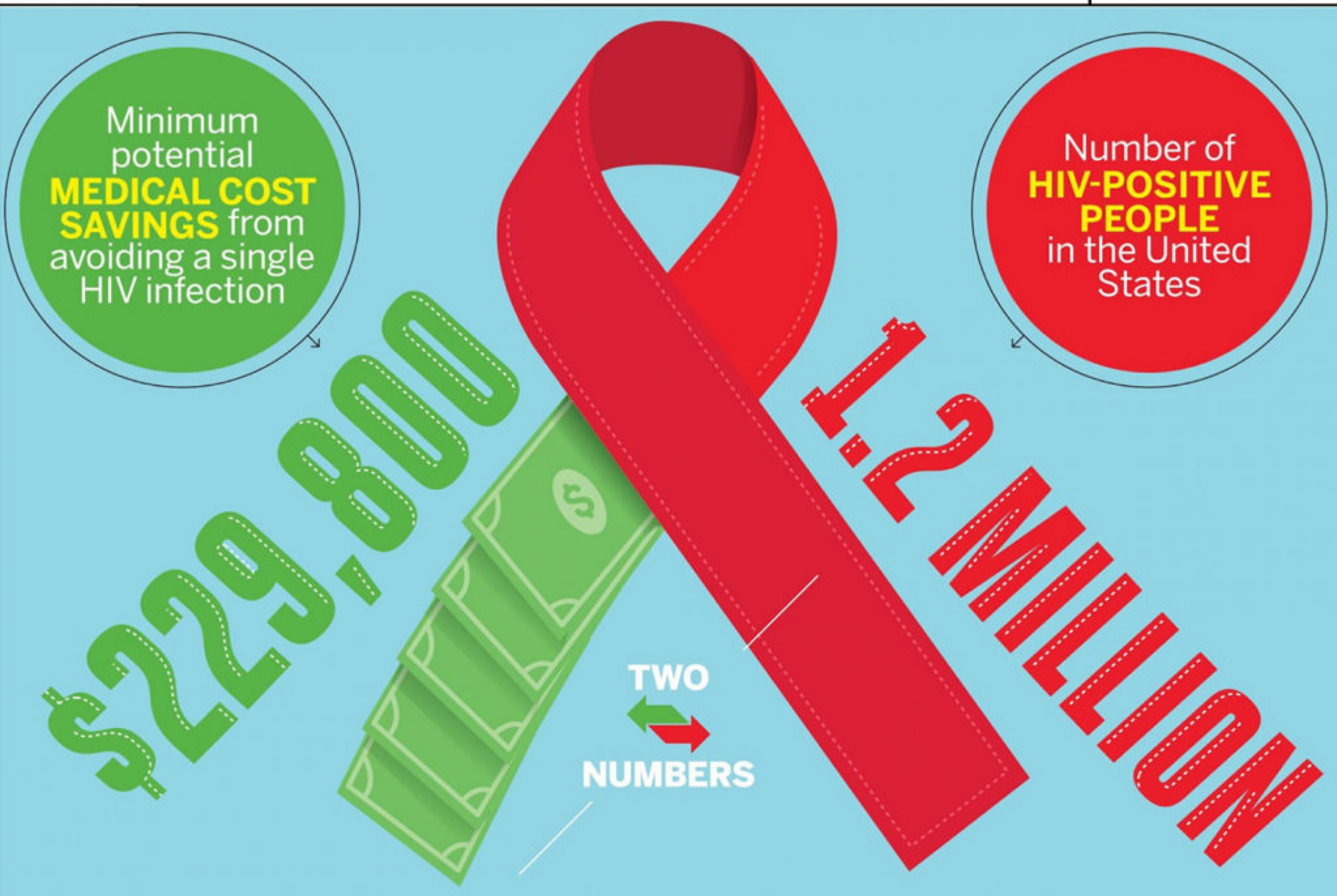
Even if he does go back, elections are not on the Palestinian agenda. Abbas's four-year term as president ran out in 2009, and the Palestinian parliament reached its expiration a year later. But Abbas has said no new balloting can be conducted until Hamas and Fatah make a deal to reunite the West Bank and Gaza. While several reconciliation agreements have been reached over the years, all have unraveled before elections could be held. Khatib, the politics professor, says the division has become convenient for Fatah and Hamas. "The two main factions are not serious about the election because their public standing is not good. They argue that you can't have elections because of the split, but I think it's just an excuse."

For Dahlan, that might be sufficient reason to stay in Abu Dhabi and direct his energy elsewhere. From his perch here, he's been running a consultancy that does business across the Arab world and apparently in Europe as well. Last year, Serbia granted him and his family citizenship, **reportedly for facilitating large Arab investments** in Belgrade.

But Dahlan insists his main preoccupation is the plight of the Palestinians. After years of animosity, he's been holding meetings with old rivals from Hamas—in Abu Dhabi and Egypt (he denied reports of **engaging with Israeli officials**,

including Foreign Minister Avigdor Lieberman). He even has a plan for breaking the deadlock: a joint government between Fatah and Hamas based on the principles of the **Arab Peace Initiative** and elections within six months. “I told them we have bloodshed but what we have in common is trying to help Palestinians survive,” he says.

On the patio overlooking the garden, his words sounded promising. In the wretchedness of Gaza, however, they might sound different.



Oliver Munday

# *TWO NUMBERS: COULD SPENDING MORE ON HIV PREVENTION CUT TREATMENT COSTS?*

**WHY NOT SPEND LESS ON TREATING HIV AND MORE ON PREVENTING NEW INFECTIONS?**

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With an estimated 1.2 million people in the United States living with human immunodeficiency virus (HIV), and an estimated 50,000 new diagnoses every year, policymakers must decide how to split funds between treatment and



prevention programs. To help with that decision making, researchers at Weill Cornell Medical College and a handful of other schools and agencies determined the medical cost saved by preventing a single HIV infection: between \$229,800 and \$338,400.

The researchers, who recently published their findings in the journal *Medical Care*, used computer-simulation modeling to map out the treatment and other medical costs for a hypothetical 1 million people who become HIV-positive at age 35, the mean age of infection in the U.S. Using hospital data and the consumer price index to determine the costs of medications, antiretroviral therapy (ART), hospital and clinic visits, and lab tests, the researchers found that someone who is HIV-positive will typically spend \$326,500 on medical care in a lifetime. More than half of that is for ART, a drug cocktail intended to keep the virus from reproducing. That number also takes into account costs associated with other illnesses, because people with HIV are more prone to those.

For someone who isn't infected but considered to be at higher risk, such as gay men and African-Americans, researchers simulated another 1 million people and found the lifetime medical cost to be \$96,700. They subtracted that number from the figure for infected people (\$326,500) and determined that preventing someone from becoming infected saves \$229,800, based on what the researchers call "current patterns of HIV care in the U.S." In such patterns, not everyone who is infected seeks treatment right away or sticks with it. But if people did do those things, the savings for preventing a single infection could be \$338,400.

"There's a greater focus these days on prevention because the number of people with infections has not gone down in the U.S.," says Bruce Schackman of Weill Cornell Medical College, the study's first author, referring to the fact that HIV rates have been mostly stable for the overall population since 2008. He adds that there is

increasing interest now in pre-exposure prophylaxis, or daily preventative medication, which can be costly. “That’s why looking at the costs saved is an important piece of the puzzle,” he says.

“We live in the era of limited resources,” says Elena Losina of Harvard Medical School, Brigham and Women’s Hospital and the Boston University School of Public Health, a co-senior author on the study. With more than a million people living with HIV and more becoming infected all the time, we need to make smart choices about how to distribute resources, she says, “and the question between prevention and treatment is always a heated debate, because obviously the value of treatment is easier to show.”

In a study that is the first of its kind, Losina says, “this report helps to assign a value to prevention strategies.”



Andrew Hetherington for Newsweek

# *O'REILLY'S JFK REPORTING WAS IMPOSSIBLE. I KNOW BECAUSE I WAS THERE*

**THE FOX NEWS HOST WOULD HAVE NEEDED A TIME  
MACHINE TO DO SOME OF THE REPORTING HE BOASTS  
ABOUT IN ONE OF HIS BOOKS.**

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I was recently bemused to see that Bill O'Reilly, the Fox News host, managed in 2012 to parachute himself back in



time to March 29, 1977 so as to make himself a witness to the gunshot that killed George de Mohrenschildt.

De Mohrenschildt, a well-connected Russian émigré, was a figure of interest in the mystery of the assassination of President John F. Kennedy because he had befriended Lee Harvey Oswald, the alleged assassin of JFK. How did O'Reilly get into the act? In his 2012 best-selling book *Killing Kennedy: The End of Camelot*, he wrote himself—as a 29-year-old reporter—into the de Mohrenschildt death scene, stating on page 300: “As the reporter knocked on the door of de Mohrenschildt’s daughter’s home, he heard the shotgun blast that marked the suicide of the Russian, assuring that his relationship with Lee Harvey Oswald would never be fully understood. By the way, that reporter’s name is Bill O'Reilly.”

But O'Reilly's insertion suffers from a reality deficiency disorder. How do I know? I was the actual—and only—reporter interviewing de Mohrenschildt on the last day of his life in 1977. I was meeting him at the Breakers Hotel in Palm Beach, Florida, because I was writing a biography of Oswald (*Legend: the Secret World of Lee Harvey Oswald*).

Because de Mohrenschildt could have helped clarify Oswald's putative connections with the CIA, the FBI and other intelligence services, I paid him \$4,000 for an exclusive four-day interview. I also rented a blue Ford LTD sedan for de Mohrenschildt so that he could travel during those days between my suite at the Breakers and the home of C.E. Tilton in the nearby town of Manalapan, Florida, where he and his 33-year-old daughter Alexandra were staying as guests. During the interview on March 29, de Mohrenschildt asked me to get him a photograph from his Dallas lawyer to confirm part of his story. Then, at around 1 p.m., we broke for an hour for lunch. De Mohrenschildt drove back to Manalapan. As he departed, he told me with a wry smile that the town was best known for the mysterious disappearance and murder of Judge Curtis Chillingworth in 1955.

Less than two hours later, de Mohrenschildt was found shot to death on the second floor of the Tilton home. The West Palm Beach deputy sheriff arrived at my hotel and questioned me and my research assistant, Nancy Lanoue, who had been taking notes during the de Mohrenschildt interview. We both were then taken to the county courthouse, where I was interviewed by state's attorney David Bludworth. The next day, two FBI agents questioned me further and told me of the circumstances of the death.

Subsequently, Bludworth gave me the investigative file to allay my suspicions that it might have been murder. Afterward, I spoke to Alexandra, and to other family members. From what I learned about the case, O'Reilly's story does not fit the facts.

For one thing, O'Reilly put himself at the wrong house. He writes he was on the steps of the home of de Mohrenschildt's daughter when he heard the shot. But de Mohrenschildt was not at his daughter's home (158 Villa Longine in Mexico City); he was at Tilton's home in Florida.

Another minor problem is O'Reilly's claim to have been an ear-witness to the death. In the 2013 version of his book for younger readers, he wrote: "As I knocked on the door, I heard a shotgun blast. He had killed himself." According to the police report, however, no one inside or outside the house heard the shot (which was fired in the second-floor hallway outside Nancy Tilton's bedroom). A maid, Anna Vitsula, said she had been in Mrs. Tilton's room a few minutes earlier to turn on an external recorder to tape a television show, but did not hear a shot. Five other people on the staff also said they didn't hear the report of the shotgun. When I asked Bludworth why no one in the house heard the shot, he said it was probably because the blast was partly absorbed by the body, the carpet and the furnishings.

In any case, because no one heard a shot, the body was not discovered for some 15 minutes after the shooting.

The exact time of the shot was established as 2:21:03 p.m. after an examination of the recorder in Tilton's bedroom, which was taping *The Doctors*. On the tape, the shot from de Mohrenschildt's gun could be heard, as could the sound of the shotgun falling on the floor.

Police investigators also determined the exact time the downstairs doors were opened because they were connected to a Rawlins Alarm System that beeped when there was movement. The beeps were recorded on the same *Doctors* tape, and the timing of each beep could be matched to the accounts given by staff members of when they entered and left the house. For example, Lillian Romani, the Tiltons' cook, had been outside sunbathing at the time of the shooting and re-entered the house at 2:23 p.m., just two minutes after the shooting. Meanwhile, Coley Wimbley, the gardener, was watering the plants outside the house at the time of the shooting and Dianne and Laurie Tisdale, who were working at the Tilton home, were getting ready to drive to West Palm Beach.

None of these people saw a stranger (or a reporter) arrive at or leave the property, much less standing on the doorstep.

About 10 minutes after the shot was fired, Alexandra returned by car from a shopping trip in Boynton Beach. She was, like her father and her friend Katherine Loomis, a house guest. When she went to her father's room to give him a gift, she found the body.

O'Reilly's depiction of his phantom-like presence at the crime scene is odd for another reason. If he had heard the gunshot, as he claims, he must have realized that he was an ear-witness to a possible murder of an important figure in the JFK assassination. It would stretch credibility to believe that a reporter as earnest as O'Reilly would flee the crime scene



without reporting what he had witnessed to anyone for 35 years.

One possible reason for O'Reilly's invisibility to everyone at the Tilton home that day was that he was in Dallas, where he worked at the local TV station WFAA. There are tape recordings of O'Reilly on the telephone in his Dallas office on March 29, 1977, the day he claims to have been on the doorstep of Alexandra de Mohrenschildt's home. They were unearthed by researcher and author Jefferson Morley.

According to these tapes, O'Reilly made several long-distance calls to Gaeton Fonzi, an investigator for the House Select Committee on Assassinations, in Palm Beach in the late afternoon and evening of March 29. He can be heard on the scratchy recordings asking Fonzi about the veracity of rumors that de Mohrenschildt had been killed earlier that day. These recordings, which were made by Fonzi, appear to put O'Reilly 1,200 miles away from the death scene in Florida.

How could O'Reilly be in two places at the same time, one may ask? In his 2012 account, the inventive O'Reilly may have been emulating the time-traveling investigator Jake Epping, who went back in time to solve the JFK assassination in Stephen King's 2011 best-selling book *11/22/63*. Epping in that book used time travel to drop in on George de Mohrenschildt before he killed himself. But of course Epping's feat was pure fiction.

Neither Fox News nor Bill O'Reilly responded to Newsweek's requests for comment.





Tolga Akmen/Anadolu Agency/Getty

## *CAN HBO WIN THE WAR AGAINST NETFLIX?*

**HBO IS OFFERING A NEW, NON-CABLE SERVICE IN HOPES OF DECAPITATING THE COMPETITION.**

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After years of producing some of the most vaunted dramas on television, HBO was in trouble. It was 2007, and some of the channel's biggest hits, including *The Sopranos* and *Sex and the City*, had run their course, and the channel's pipeline of premium programming had run dry. AMC's *Mad Men*, a show HBO had passed on, was dominating water cooler conversations. "I think we learned something



as a company,” says HBO President Michael Lombardo of that lull. “You need to keep those scripts coming and be ready for the next thing. Now we wake up anxious to find a different show.”

Fast-forward to the present. HBO has rebounded, thanks in part to standout shows such as *Girls*, *Game of Thrones* and *Last Week Tonight With John Oliver*. But the channel is at yet another crossroads. For years, it’s been available only with a package of paid channels, but the pay-TV universe is shrinking as viewers increasingly abandon cable for online, on-demand services such as Netflix and Amazon Prime. In 2014, 125,000 TV subscribers dropped off the books of the top 13 pay-TV providers in the U.S. to join the 10 million or so broadband households that don’t subscribe to paid television. The industry calls them cord-cutters, but that’s a misnomer. These people are more tethered to the cord than ever; they’re just pulling a different kind of content through it.

Which is why, beginning this spring, HBO will begin selling \$14.99-a-month stand-alone subscriptions for **a service called HBO Now**, decoupling the premium channel from the cable machine that’s made it billions. “When you subscribe to HBO Now, you will have access to all our programming, past, present and future,” HBO CEO Richard Plepler said at an unveiling with Apple last week. The move throws HBO in direct competition with Netflix and Amazon, among others, at a time when the battle for eyeballs has grown more and more fierce.

Whether HBO’s plan works may depend on its ability to find the next *Game of Thrones*. The channel is a nice addition to the hundreds of cable or satellite offerings, but on its own, HBO may not seem as attractive for the price, especially if other channels continue to come up with HBO-quality television.

Plagued by Glitches



Five years ago, the idea that Netflix, Amazon or even Hulu would invest in original programming seemed ridiculous. They were tech companies, and television is a hits business. Then, in 2011, Netflix CEO Reed Hastings cited HBO as his biggest competitor, even though the company had no original content and HBO had just started HBO Go, its online streaming service. But then came Netflix's breakout shows, *House of Cards* and *Orange Is the New Black*, which were both green-lighted in 2013. As Netflix Chief Content Officer Ted Sarandos told GQ that year, "The goal is to become HBO faster than HBO can become us."

Today, Netflix has slightly more revenue than HBO and an edge in U.S. subscribers (38 million vs. 30 million). But HBO has more than five times the profit (\$1.8 billion), in large part due to the channel's ability to command premium pricing for high-end original series and movies. The company is also starting its new venture during boom times. Despite pay TV's decline, subscriptions to HBO and its sister network, Cinemax, are growing, up 2.8 million in 2014, their biggest tally of new subscribers in 30 years.

"I think HBO is still king of the block," says Michael Nathanson, an analyst at the research firm MoffettNathanson. "They raised their game in the last couple of years. Just because the others have one or two great shows does not mean they are HBO."



*Lena Dunham and Zosia Mamet, in a scene from the fifth episode of season four of the HBO show "Girls"* Credit: Craig Blankenhorn/HBO

To propel its new service, HBO is looking for a different kind of distributor. Apple TV (which is HBO's initial launch partner), TiVo, Amazon and some cable operators, such as Cox and Cablevision, want to offer HBO with broadband for customers who don't subscribe to pay TV and probably never will. At the same time, HBO will be making it easier for viewers to cut the pay-TV cord, and no one really knows if what replaces cable will be anywhere near as lucrative for TV networks.

Some believe HBO will benefit from moving outside the cable bundle. "HBO is one of the world's best brands," says Rich Greenfield, a tech and media analyst at research and brokerage firm BTIG. "The greatest inhibitor to HBO's growth has been the \$70-plus buy-through."

Jeff Bewkes, CEO of Time Warner, HBO's parent company, has long said the premium channel would ditch cable. The question was always when. Last year, discussions about HBO Now grew more serious, as Time Warner's higher-ups debated whether the company should build

its own Netflix-like service. But during the most recent season of Game of Thrones, glitches plagued HBO Go, further throwing into question the viability of a broader on-demand service. The channel had hired a team of ex-Microsoft engineers in Seattle to shore up HBO Go and build HBO Now, but when the estimate came back last year, Time Warner blanched: It was going to cost more than \$1 billion to build a distribution system on par with Netflix, and it wouldn't be ready until 2017. Late last year, HBO abandoned those plans. The channel contracted with Major League Baseball Advanced Media, which streams baseball games on the Web and powers other live sports programming. The new service will begin in April.

#### ‘A Huge Gamble’

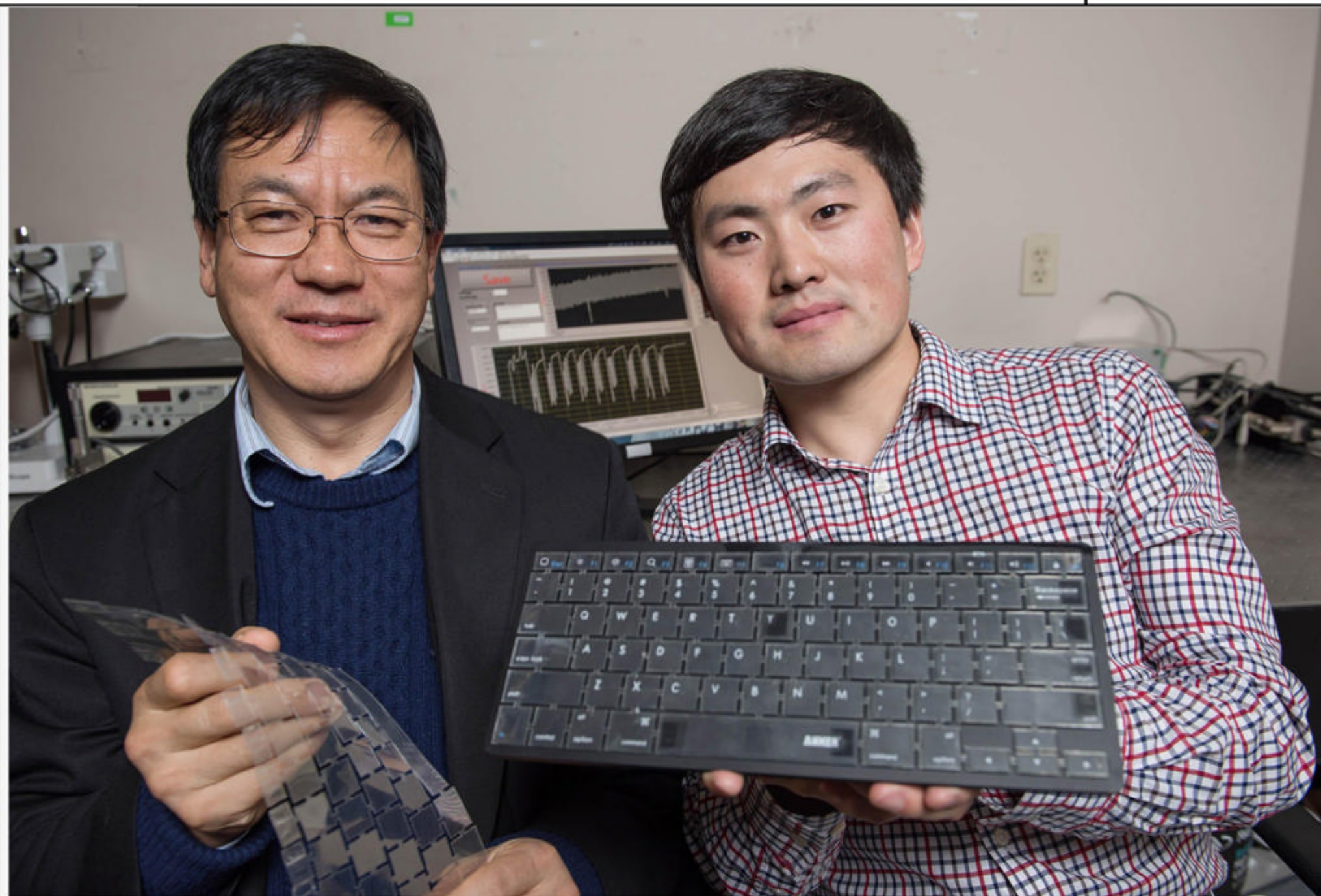
In the short term, HBO Now's success may hinge on the public's continued appetite for Game of Thrones. The service will launch with the fifth season of the series, a medieval fantasy epic that's the network's biggest hit since The Sopranos. The show isn't like the channel's typical programming. When HBO created it in 2010, the channel was better known for serious-minded dramas than shows about dragons. "It was a huge gamble [for HBO]," wrote co-creators David Benioff and Dan Weiss in an email.

The competition for the next big show is going to get very expensive. Netflix has committed to 320 new hours of original programming in 2015. Because many of its competitors are pouring money into new shows, HBO will be relying on its renowned development process to create new hits. Entourage, for example, was in development for two years before HBO shot the pilot. For now, the channel's access to the best ideas and to top writers, directors and actors is its biggest advantage. "When creators think about their content, we've heard that their choices are one of three: HBO, Netflix or FX," says Nathanson. "Spending more money doesn't guarantee success."



HBO has often dominated water cooler conversations, but that talk is a lot broader than it used to be. Today, there's so much good television but not enough time in the day to watch it all, even for those who are deeply committed, or deeply unemployed. Which means the competition for viewers' attention is more heated. "You are inundated by the number of new shows, new networks, new digital networks" says Lombardo, the HBO president. "What happens when there is too much volume? How do you let a consumer know a show exists?"

The answer, he says, may be for HBO to pump as much money into marketing as it does into its programming. Yet the channel is taking a risk with HBO Now. Lombardo may be eager to find the next "it" program, but because HBO no longer has a monopoly on premium television, non-subscribers may be satisfied with what they already have. Lombardo, however, remains confident that the new service will be successful. "A certain part of this job is just luck and magic," he says. "[But] people watch more than one network. I don't know if there is a winner."



Jun Chen/Georgia Tech

## *‘SMART’ KEYBOARD CAN ID YOU BY HOW YOU TYPE*

**IT ALSO HARNESSSES ENERGY FROM YOUR TYPING  
MOTIONS.**

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As data breaches and identity theft become more and more common, the market is growing for biometric technologies—like fingerprint or iris scans—to keep others out of private e-spaces. They’re still expensive, though,

and some balk at the prospect of having deeply personal identifiers taken and maintained by a third party.

Researchers from Georgia Tech say they have come up with a low-cost device that gets around some of these issues: a smart keyboard. This contraption precisely measures the cadence with which one types and the pressure fingers apply to each key. These patterns are unique to each individual, says Jun Chen, a doctoral engineering student. By measuring how somebody types a password, he says, the keyboard can determine people's identities, and thus, by extension, whether they should be granted access to the computer it's connected to—regardless of whether someone gets the password right.

It also doesn't require a new type of technology that people aren't already familiar with. "Everybody uses a keyboard...and everybody types differently," Chen says.

The device also harnesses energy when fingers touch keys—energy that could be used to, for example, power a wireless emitter and eliminate the need for a cord. The keys are made of layers of polymers that harbor a slightly negative charge, whereas skin is partially positively charged, Chen explains. When fingers come into contact with the keys and press down, and lift again, they transfer electrons to the keys. This completes an electric circuit with the keyboard, producing a small current.

This phenomenon, called "contact electrification," is the same process that creates static electricity, Chen says: "It's like when you run your hand across a wool blanket and see 'sparks' in the darkness." Only to a lesser and invisible degree.

In a study describing the technology **published** in the journal *ACS Nano*, the researchers had 100 volunteers type the word touch four times using the keyboard. Data gleaned from the device could be used to identify individual



participants based on how they typed, with very low error rates, Chen says. So far, there is just one working prototype of the intelligent keyboard. But, Chen says, it should be pretty straightforward to commercialize and is mostly made of inexpensive, plastic-like parts. The team hopes it could make it to market in about five years.



Toru Hanai/Reuters

## *AFTER THE APPLE WATCH, IS THE ICAR NEXT?*

**APPLE'S THE MOST VALUABLE COMPANY IN THE  
WORLD, AND DESPERATE TO REINVENT ITSELF.**

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The joke going around is that Apple is moving into the auto industry: Its engineers are working on a car without Windows.

A lot of today's great technology companies are chasing second acts. Rumors abound that Apple is buying Tesla



and **storming into cars**. Google is throwing everything against the wall at Google X. Facebook placed a huge bet on WhatsApp. IBM is investing \$1 billion in its Watson computer.

The chances any of these will be gigantic successes? History says: good luck with that.

The problem is that every great technology story is pretty much a **miracle**. Fewer than one in 1,000 VC-funded startups go on to be worth \$1 billion or more. Of those, only a handful become \$100 billion tech superstars. Explosive success relies on some crazy combination of the right people coming up with the right idea and executing it at precisely the right time—a triangulation that's as extraordinary as an Olympic gold medal decathlete changing genders.

And hitting the jackpot once is zero indication you can do it again. Over the past century, only a few big tech companies have radically reinvented themselves effectively—shifted from an original successful business model to an entirely new economic engine for a new era. You can see Microsoft struggling with this now. From Zune to Bing to Windows Mobile, it has spectacularly failed to come up with anything to succeed its PC-era blockbuster, Windows. But now PCs running Windows are as mundane as cement, and Microsoft is as exciting as an old hound dog lying on a porch.

The only certainty in technology is that every fantastic ride ends. Every technology gets displaced by new technology. So big tech companies have to invest in experiments, striving for a subsequent hit that may never come.

Apple is beguiling the tech world amid rumors it might try to disrupt the global auto industry by buying Tesla. Apple is the odd tech giant that has, in its past, remade itself—aided immensely by its near death in the 1990s. Much easier to take big risks when you're already face down in a pool of puke. In **2000**, Apple was a minor personal



computing company stuck at about 4 percent market share and \$8 billion in annual revenue. In 2001, Steve Jobs introduced the iPod, starting Apple on its path into personal technology and media. The iPhone, out in 2007, hit the accelerator, and now Apple is surfing atop a giant mobile technology wave, the most valuable company on the planet. Mac computers—Apple's old centerpiece—barely matter.

But what's next? Apple doesn't really invest in research and development. There is no Apple Lab where scientists are inventing the amazing gizmo that will change the world in 2025. But given Apple's size, it will need a huge next act. In that context, a move into cars seems like one of the few plausible ideas.

Apple has more than \$178 billion in cash. It could buy Tesla, worth around **\$25 billion**, as easily as most of us pick up the tab at Applebee's. The global auto industry is a \$1.6 trillion annual market—four times the size of the smartphone industry. “The world's currently richest, most valuable technology company will meet one of [the world's] most disrupt-able businesses,” says a report by Morgan Stanley, which seems to salivate at the prospect of money to be made out of whatever mess such a play would create. If Apple rethinks cars the way it rethought personal technology, Ford and Toyota will wind up like Tower Records and Nokia, and Apple will make \$1 trillion on iCars.

Google will need a second act too. Despite all the ways Google infiltrates our lives—Gmail, Android, Chrome, YouTube—it gets **90 percent** of its revenue from search advertising. Google was born as a search company, and it's still a search company. For more than a decade, it has granted employees 20 percent of their time to work on fresh ideas. It funds Google X, a lab straight out of a James Bond movie developing stuff like driverless cars, robots and space balloons that can supply Internet access. All of it is fascinating, and entirely different from anything the company's done to date.

IBM has been around for 104 years, reinventing itself a few times along the way. Now, stalled, it seems to need to do that again, and CEO Ginni Rometty is betting on the Jeopardy-winning **Watson** system. Last year IBM said it is investing \$1 billion to develop Watson. Although, compared to what Apple might spend on cars, \$1 billion actually seems tepid. For that matter, Facebook just spent \$19 billion on **WhatsApp** because Mark Zuckerberg was afraid his original laptop-centric service would get left behind in the mobile age. Even Facebook, at 10 years old, felt a need to get younger, fresher.

Maybe the most remarkable reinvigoration of late belongs to Amazon. Online retailing is the company's heart and soul. In 2006, the company launched Amazon Web Services, based on the idea it could rent out some of the computing capabilities it already developed to use inside Amazon. Now **AWS** is a \$2.5 billion business and has altered Amazon's image from retailer to tech pioneer. It's not exactly a second act, yet, but it's a strong subplot.

Asked about AWS and other things Amazon tries, including the maligned Fire phone, CEO Jeff Bezos said there's no option but to seek the next big business. "We've made billions of dollars worth of failures at Amazon," he said at a recent conference. "But companies that don't invest in new things and embrace failure end up with a Hail Mary at the end of their run."

If Apple does buy Tesla and get into cars while the iPhone is still a scorching business, it will be an act of corporate bravery worthy of Steve Jobs. The company will be accepting failure as an option now, instead of as a certainty later.

Oh, and it's a given that the charger for an Apple electric car won't work with any other brand of electric car.



Nacho Doce/Reuters

# *THE EMBERS PROJECT CAN PREDICT THE FUTURE WITH TWITTER*

**NEW D.C. TECH HAS ACCURATELY FORECASTED  
IMPEACHMENTS, STUDENT PROTESTS AND MORE.**

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For the majority of Americans born after World War II, it is unlikely Arlington, Virginia, holds any special significance. But for those who know that the outcome of the war largely hinged on Imitation Game–style code-breaking,



Arlington has a mystique as the epicenter of American military cryptanalysis.

In 1942, the U.S. Army Signal Intelligence Service quietly took up residence at the Arlington Hall Junior College for Girls—a private school that instructed young ladies on art, music, manners, proper dress and home economics—and used it as its headquarters for staging attacks on Japanese cipher systems. The National Security Agency, founded in 1952, was originally based at Arlington Hall. The Defense Intelligence Agency, formed by Secretary of Defense Robert McNamara at the Pentagon a decade later, also occupied two buildings there.

Today, Arlington maintains its code-breaking roots, but now it's cracking other types of codes—and has advanced into the realm of quantum computing, becoming a hotbed of government-funded research initiatives, spearheaded by both public and private institutions primarily serving Washington.

One of these, Virginia Tech (VT), offers a glimpse into just how much "big data" has changed the game by magnifying the U.S. intelligence community's ability to forecast—with phenomenal accuracy—human behavior on a global scale by scouring Twitter, YouTube, Wikipedia, Tumblr, Tor, Facebook and more. VT is using algorithms and a variety of advanced tools to sort through dense and complex information for patterns in the chaos—patterns that frequently point to events before they happen, such as civil uprisings, disease outbreaks, humanitarian crises, mass migrations, protests, riots, political routs, even violence.

“Anytime you tweet or post on Facebook, you are becoming a part of the big data economy,” says Naren Ramakrishnan, a professor of computer science at VT and director of the university's Discovery Analytics Center, which, as he describes it, “studies the entire gamut of data science.” Last year, the center moved its base of operations from VT's Blacksburg, Virginia, campus to Arlington—also home to the Pentagon—after scoring more than \$15

million of grants and contracts for its EMBERS project. Ramakrishnan runs the project, which is, so far, leading the arms race to turn big data into forecasts that U.S. policymakers and intelligence agencies can use.

“A lot of analysts can give you forecasts for the coming year, but when we do forecasts, we’re talking about specific dates,” says Ramakrishnan.

Since its inception in April 2012, an average of 80 to 90 percent of the forecasts it generates have turned out to be accurate—and they arrive an average of seven days in advance of the predicted event. EMBERS (short for Early Model Based Event Recognition using Surrogates) derives its intelligence from what data geeks call “open-source indicators”—social media, satellite imagery and more than 200,000 blogs that are publicly available. It mines up to 2,000 messages a second and purchases open-source data such as Twitter’s “firehose,” which streams hundreds of millions of real-time tweets a day.

While much has been made of the government’s secret surveillance operations—particularly those that spy on Americans—the EMBERS project is focused on tracking human behavior overseas and publishing its findings, even if negative. “We are not looking at anything classified and we aren’t forecasting terrorism, because we don’t have access to those kinds of back channels,” Ramakrishnan says. “We are looking at data anyone can get.”

It’s a fully automated system that churns out 45 to 50 total alerts a days, 24 hours a day, seven days a week. It spits out the date of a predicted event, the location and coordinates, who or which groups are involved, the reason for the unrest and the confidence level of the prediction. The goal? To forecast anything that might give the U.S. a heads-up on protecting Americans overseas, as well as its allies.

The project was first put to work examining open-source data streams in Latin America: It accurately predicted the impeachment of Paraguay’s president in 2012, the World

Cup protests in Brazil in 2013, and the 2014 violent student protests in Venezuela. These days, the program monitors 20 countries in Latin America and is beginning to move into the Middle East and North Africa, covering Iraq, Syria, Egypt, Bahrain, Jordan, Saudi Arabia and Libya.

EMBERS was the product of a 2012 contest organized by Jason Matheny, an associate director of the government's Office for Anticipating Surprise (yes, that's the name of a real office) and a program manager at the Intelligence Advanced Research Projects Activity program in the Office of the Director of National Intelligence. Three teams—from Virginia Tech, quantum computing firm Raytheon BBN Technologies in Cambridge, Massachusetts, and HRL in Malibu, California, formerly Hughes Research Laboratories—were asked to build the best possible forecasting model based on open-source indicators. The most successful of these was EMBERS, which ended up integrating several members of the other teams into its own, including Raytheon BBN, which now builds some of EMBERS's social media models, like the ones trying to forecast civil unrest from reading Twitter feeds. Some of the guiding principles of the research, says Scott Miller, senior technical director of Raytheon BBN's speech and language group, are astoundingly simple.

“We look for chatter, specific words indicative of protest,” says Miller. “We found there's a correlation between the aggregate frequencies of unrest terms—for example, the Spanish word *protesta*—and the amount of civil unrest that we find happening in those regions.”





*Kuwaiti citizen Raken Subaiya checks his Twitter feed on his phone as Yousef al Anazi looks on during a sit-in protest in front of the Justice Palace in Kuwait City on October 19, 2012. Credit: Stephanie McGehee/Reuters*

In other cases, though, information coming in can be much more complex. Because the info can be in the form of a picture, words or a chart—not to mention spanning many different languages and dialects—EMBERS uses advanced data-extraction and translation methods in partnership with another Cambridge company, Basis Technology, which enriches data and provides text analytics tools that, rather than translate foreign languages into English, draw direct meaning from native tongues. For instance, it is able to interpret Arabic printed in English phonetic characters (popular on Twitter). Graphical data is read right off Tumblr and aerial satellite photos are processed through automated tools for imagery.

Despite the technological sophistication, the algorithms of the predictive models still have to go through a great deal of trial and error. A team of 80 experts and 13 subcontractors—including social scientists, computer scientists, epidemiologists, political scientists, statisticians and regional experts for each country—work on designing

and updating the best possible models. Ramakrishnan likens training computers to recognize patterns to teaching email applications to recognize spam. There is a “supermodel” that, over time, “learns which models are best, but it keeps on learning, because the situations in these countries change over time,” says Ramakrishnan. The supermodel receives a monthly report card on the accuracy of its predictions, which tells it which models are working in which combinations—and which ones aren’t. Then they adjust accordingly.

The independent contractor that reads and grades the accuracy of EMBERS’s forecasts is a nonprofit research facility in nearby McLean, Virginia, called MITRE, a collection of government-funded research centers. Terry Reed, the information systems engineer in MITRE’s Homeland Security Systems Engineering and Development Institute, oversees a team of about a dozen people who match EMBERS alerts to news reports to determine if its predictions come true. EMBERS now scores nearly perfect in predicting that events will happen, but is still working on getting the details of each event right, says Matheny.

Ramakrishnan says he believes EMBERS has the potential to forecast population-level events all over the world. “One could imagine technologies like this would be useful in the future and could become mainstream,” he says. “Trying to predict this is not new. What is new is that social media is allowing us to do this better.”

To date, government agencies are not concertedly acting on the EMBERS project’s predictions, and it remains unclear what the government plans to do with these burgeoning abilities. Matheny declined to disclose exactly which government agencies are keen to adopt the predictive technology of EMBERS, but he confirmed to Newsweek that intelligence, public health, humanitarian affairs and global and national security agencies are closely tracking it. “We keep government partners informed about the results of the research,” he says. “Over a dozen agencies have been

given regular updates on the progress of this research.” One of the agencies using EMBERS alerts, says Ramakrishnan, is the Centers for Disease Control and Prevention. In addition to providing information to government agencies, VT also can sell access to its social-media technologies to commercial entities, although there is no immediate plan for that yet, says Ramakrishnan.

“There are a lot of legitimate reasons to do this,” says Ramakrishnan. “This can allow us to increase our security at hot spots or offer more accurate travel advisories, protect Americans from violence and increase our security at embassies.”

MITRE, for its part, has deep connections to the nation’s defense, security and intelligence apparatus. In fact, according to MITRE, Reed represents the Department of Homeland Security’s information security chief on a committee within the National Security Systems Working Group focused on policy issues related to classified information systems. While MITRE confirmed Reed's work with EMBERS, she declined to be interviewed by Newsweek.

EMBERS also may not be the only government project being honed to target social media for forecasting purposes. In February, when a group claiming to be associated with ISIS briefly took over Newsweek’s Twitter feed, it released what appeared to be an Army document detailing “The Gist Mill Pilot Project,” which referred to a "concept of operations" for open-source indicators and "social media analysis." According to a Pentagon spokesman, the project was discontinued in 2013, but the Army is in the process of fusing social media with its traditional intelligence, surveillance and reconnaissance operations and continuously introducing new capabilities.

Despite the predictive benefits of tapping into open-source data, Karen Greenberg, the director of the Center on National Security at Fordham University in New York,



cautions that closely tracking the masses through social media and other means sounds a lot less *Imitation Game* and a lot more *Minority Report*.

“We really need to decide on some guidelines and legal and ethical parameters at the initial stages of all of these projects,” she says. “We have seen that when that does not happen, we later hear from our government, ‘We are dependent on this program, we can’t dismantle it now.’ The consequences of these programs are extraordinary. As a nation, do we agree that we are so unsafe that we need these programs to reduce our risk to zero at the expense of our privacy?”

Intelligence officials often point out that the term mass surveillance is a misnomer, arguing that the goal of government surveillance is to target specific individuals or groups, not the masses. But EMBERS only engages in mass surveillance. “We are not tracking individuals in our project,” says Ramakrishnan. “We are following crowds and groups.” He notes the program does follow public figures’ Twitter feeds and other key leaders, due to the fact they have outsized influence on the masses, but not ordinary citizens.

Greenberg adds that while such tools are no doubt useful, there are signs the government may be becoming overly dependent on technology to alert it to security threats. “Somehow, we missed the Arab Spring, we missed the rise of ISIS,” she says. “These are valuable technological tools, but there is no substitute for being on the ground. You want your answer from more than two clicks.”

Raytheon BBN’s Miller agrees that when in doubt, there's nothing like the ground truth: “Right now, our Middle East predictions are not there yet. The best way to figure something out is to just ask somebody.”



Ivan Guilbert/Cosmos/Redux

## *RETIRING TOO EARLY CAN KILL YOU*

**MORE AND MORE RESEARCH IS POINTING TO THE POSSIBILITY THAT WORKING DEEPER INTO LIFE IS YOUR HEALTHIEST BET.**

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Cheryl Simmons is 63 years old and can't wait to go back to work. For the past five years, since her daughter left for college, she's been at home in Providence, Rhode Island, scrolling through the latest tech startup news on Twitter, gazing from afar as each Consumer Electronics Show passes by, wondering how she can become a part of it. She says

she has no plans of following in the sauntering footsteps her parents took through retirement.

“I’m not someone who thrives on a lot of unscripted free time,” says Simmons, a former investment manager and nonprofit organizer. “I like feeling like there’s a place in the world for me to grow. [When her parents retired] my mother would join clubs, like bridge clubs, and my father would golf. But for me, that wouldn’t have been enough.”

Simmons has a great deal of company. According to a recent Gallup poll, the **average age** for retirement in 1991 was 57. In 2014, it was 62. Aging baby boomers are working longer than any previous generation—either out of preference or because of the financial difficulties of early retirement.

Either way, it’s probably a good thing. Early retirement, it turns out, is bad for your physical and emotional health. The World Health Organization **estimates** that a suicide occurs every 40 seconds worldwide. The highest rates, for both men and women in almost all regions, are among those 70 and older.

In 2013, France’s federal health agency **INSERM** studied dementia prevalence among 429,000 people. Controlling for the possibility that some people retired because of their dementia, they found that jumping ship at 60 increased your risk for the illness by about 15 percent, compared with those who waited an extra five years before hanging up their hats. They concluded that work keeps our brains young and fit. Meetings can be stressful, but binging on reruns is actually unhealthy.

Take Judy Uman. She is 76 and has been working for the Bronx Jewish Community Council in New York for the past 30 years. Uman started as a social worker in her 40s, “really in the old-fashioned sense of the word,” mostly helping people to fill out forms, she says. Now she supervises a staff and runs many of the agency’s programs, with zero interest in trading it for something slower. “What’s keeping me



around?” she says. “I really think [the work] keeps me young and vital, and I feel very connected to a lot of the people I have worked with over the years.”

### Fate and Fat

The health benefits and longevity that might become available to you by working into your septuagenarian years only accrue if you are reasonably fit. If trends hold, millennials won't be inheriting the rich, late-age lifestyles of their elders. We may have cut out some of the unhealthy habits of our grandparents—smoking rates have dropped precipitously, for example—but we've picked up others. For one thing, “people are fatter than they used to be,” says Dr. James Fries, a professor of medicine emeritus at Stanford University. The **best estimates** suggest more than two-thirds of today's adults, or 68.8 percent, are overweight or obese.

Rates of **child obesity** are even more troubling, having grown from 7 percent in 1980 to 18 percent in 2012. Being overweight burdens the entire body and can even cut short a person's career. In 2009, a **study** published in *Obesity* found that overweight status at 25 and the eventual slide into obesity in middle age was associated with earlier retirement due to poor health. “They essentially have less vitality,” Fries says of the younger generations, “because of the problems that go along with obesity.”

Perhaps more important, climbing rates of Alzheimer's disease—and FaceTime replacing actual face time—are combining to make trouble upstairs, in the brain. In 2013, the nonprofit organization Alzheimer's Disease International shook the medical community with the **prediction** that by 2030 worldwide dementia rates will double, and by 2050, they will triple. Millennials are doomed to be the most dementia-racked generation ever. As it stands now, medical science has no tools to stem the tide of Alzheimer's; it can only watch as the disease overtakes its victims without mercy.

Compounding that are the deteriorating rates of social connection. One of the hallmarks of modern industry is its reliance on (and exploitation of) remote technology. Through a glass screen, we can interface and synergize with anyone, at any time. Logistically, this knocks down huge barriers for business to run smoothly. But when working from home isolates us from the eight-hour interactions we might be getting otherwise, our health pays a price. “The extent to which we lose [those interactions],” says Dr. Gary Kennedy, a geriatric psychiatrist, “we lose something very precious.”

That precious something could be the most precious something. As young people traipse from job to job, feeling a loose sense of loyalty at each stop, their social lives traffic in the power of acquaintances—weak ties that may **help land a job** today but don’t provide the emotional stability needed to stay lucid later on.

In the absence of rock-solid social ties, the human brain can fall into some pretty dark places. A **study** published in January in *Work, Aging and Retirement* looked at 1,200 workers from service, construction and manufacturing backgrounds, aged 52 to 75. It concluded that those without loved ones nearby and those whose health began to deteriorate were at a far greater risk for drug and alcohol abuse than people who stayed active. “Moreover,” wrote study author Peter A. Bamberger, “particularly if individuals’ health limits their involvement in meaningful postretirement activity, workforce disengagement results in social marginalization, isolation, and boredom.”

In the first few weeks of retirement, free time might seem like a welcome respite. After a while, though, it can start to feel like a prison sentence: People no longer feel as if they get to relax all day, but have to. And so many of them are forced to do it alone.

Fries shies away from overprescribing how to live healthfully in old age. “I’m always suspicious of people

trying to find formulas that everybody ought to be doing,” he says. But there are still fundamental boxes older adults need to be checking in order to live out their golden years in good health. They need to stay physically active, whether it’s daily stretching or powerlifting competitions, and they need to stimulate their brains, ideally in the presence of others. These basics have so far eluded millennials. But changing this ill tide is possible, Fries says, so long as people keep their priorities in check. “You just gotta be alive to stay alive.”





Stephen Duneier

## *THE GUERRILLA ART OF THE YARN BOMB GOES NATURAL*

**HOW TO IMPROVE ON MOTHER NATURE? BLOW IT UP  
WITH A YARN BOMB.**

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Relax. They didn't come from Mars or some distant, undiscovered galaxy. The 10 aliens (and their 24 tents) that appeared in the backcountry of Santa Barbara, California, in late January were conceived in the backyard of a hedge-fund manager turned yarn bomber.

“Yarn bombing,” for those out of the loop, is a public and oft-times guerrilla art form in which all kinds of objects, from parking meters to hulking vehicles, get covered in brightly covered yarn. Some may remember the Mexico City bus stitched over in 2008 by Magda Sayeg, often called the “mother of yarn bombing.” Typically, yarn bombers ply their craft in urban areas for maximum exposure.

But Steve Duneier, a 47-year-old Brooklyn, New York, native, is bringing it to the wild. “My goal is to draw more people into the wilderness, which I do by detonating massive, colorful yarn bombs in nature,” says Duneier. (For the record, this project can’t really be termed guerrilla, since he got a permit from the Los Padres National Forest folks.)

If the wording sounds a tad violent, rest assured: Duneier’s public installations induce a calm, even meditative experience. His latest, Alien Campsite, sits on a meadow carpeted in lacey wild grasses with views extending to the Santa Ynez Mountains and the distant Pacific. It didn’t hurt that the day I viewed it the sky was boundless blue and temperatures were in the ’70s.

Indeed “bombing” is the last word I’d associate with the peaceful scene featuring Duneier sitting cross-legged, clad in his trademark cowboy hat, watching clumps of visitors strolling amid the works. One of them, Jeff Wing, a 55-year-old writer, says it’s not at all what he expected. “It’s more striking than I really pictured. Even though the colors are jumping, it seems almost like an organic extension of the landscape,” Wing says.

This was the second of Duneier’s yarn bombs for Emily Baum, a 20-year-old Santa Barbaran studying environmental science and animal ethics at New York University. “I was at the one he did last year at Lizard’s Mouth [a boulder-strewn field in the foothills overlooking Santa Barbara]. It was really cool to see how the whole space was transformed. I mean, I love it. This one is ka-razy.... I’ve never been to



this spot before, and it's beautiful; so it got us up and out, which is supercool."

With no publicist, Duneier relies on word of mouth and social media to get people to his events. Still, it's the chance encounters with his creations that most excite him. "My favorite part of the whole process is when I hear people walking up a trail, bantering back and forth and they turn a corner and their conversations cease and I hear these gasps and the 'Holy cow!' That's what I'm looking for—to really surprise people in a good way."

Duneier's transformation from high finance to high-altitude art can be traced back to a series of New Year's resolutions he concocted in 2012. While most individuals focus on losing weight or organizing their offices, Duneier took the concept to a new level by committing to a list of "Giving" and "Learning" resolutions. Among the 12 items on his "Giving" list: building homes for the Apaches of Arizona and donating bone marrow. But while compiling his "Learning" list—among them mindfulness, veganism and unicycling up a mountain (which he did)—his wife suggested knitting and proceeded to teach him the basics. Duneier hated it. "It was supposed to be this Zen-like thing that I heard people describe, but it was aggravating and frustrating for me right up until I stopped doing it," he says.

He botched his first knitting project, a scarf. Somehow though, he powered through stitch after stitch to launch his first yarn bomb—on a giant Eucalyptus tree two and a half miles up a popular hiking trail. Unfortunately the date he'd set for the event didn't leave him enough time to complete the 400 square feet of yarn he needed, so he sought help from the knitting community.

Some 12 people from around the country ended up contributing, not including the three friends Duneier enlisted to lug the yarn and his rented ladder up the mountain.



The multi-hued trunk wowed hikers as they caught sight of the solitary tree dressed in every imaginable color. The yarn bomb became an Internet sensation, with the knitting community sharing stories and posting photos of the Cold Spring Tree.

The installation was up for nine days, then “defused,” and shipped off to Warm Up America, a North Carolina-based charity that converted the knitted pieces into blankets and scarves for the needy.

At the time, Duneier thought his foray into yarn bombing was over, but six months later, Marcy Maltese, one of the contributors to the tree project, asked him to crochet some pieces for her project to convert giant cement slabs into Rubik’s cubes for Comic-Con in San Diego. So Duneier did what anyone with a degree in finance and economics would do; he taught himself to crochet, by watching one of Maltese’s YouTube videos. “Almost instantly I enjoyed it. So I just start going like mad on airplanes, since I was traveling for business at the time.”

Other projects followed, like his 2013 Saddle Rock yarn bomb of a massive boulder. Last February he suspended a 16-foot Starfish made of reflective yarn over a series of small waterfalls. The undertaking, which involved some risky rock climbing, ended up getting torn down by vandals.

But it was his Lizard’s Mouth yarn bomb last June that got him local TV coverage and solidified his commitment to the art form. And though he contributed a brightly colored American flag, the bulk of the work featured contributions from 388 knitters from 36 countries and every state—all critical in transforming 18 sandstone boulders to surreal blobs of color in the otherwise subdued landscape. “When you step back, you see a massive installation, but when you zero in on it, you’ve got these pieces that people send in that are works of art on their own.”

Having grown up in South Florida, Duneier often cites Christo’s wrapping of the Biscayne Bay Islands as a big

inspiration, but Chuck Close, the photorealist known for his larger-than-life portraits, is a bigger influence. “Close does these paintings where each square is like a little amoeba-shaped painting, very colorful, bright and odd-looking, but when you pull it back, there’s a portrait. That is the way I see what I do with the yarn bombs”

For Alien Campsite, Duneier had even more contributors: 656 artists from 41 countries and all 50 states. The seven months of preparation involved not only assembling the hundreds of contributor pieces but also finding the mannequins and hack sawing and reconfiguring their body parts to achieve the look he desired. For example, to create Long Neck, Duneier removed the head, then fabricated an extended neck using chicken wire wrapped with fiberglass and duct tape. What emerges is an elegant-looking being with swirls of (relatively) muted colors that complement the red lipstick on her visage.

For The Sorceress, Duneier swapped out the left and right arms, and then positioned them so they faced behind her body to mimic wings. To that he added a dazzling rainbow-colored head covering juxtaposed with her wild-patterned “skin.”

(“I would love to wear anything that these aliens are wearing,” Baum says.)

Duneier didn’t want the figures “just standing there,” so he added tents, which he fashioned out of long pieces of wood. “This idea of having tents and these odd creatures made of yarn in the middle of nowhere came together as the Alien Campsite.”

The result may seem at first to be an odd pairing, but many visitors think it enhances the already captivating surroundings.

Not that there aren’t detractors. “This is an affront to nature,” wrote a commenter on the Santa Barbara city blog, Edhat. “This is all ego, and zero respect for wildlife,” wrote

another. “I cringe when I think of the little bits of nature that will be destroyed underfoot.”

But Helen Tarbet, field ranger for the Los Padres National Forest, sees it differently. “It’s like any other permit we do. We have to do an environmental impact study to make sure it’s not disrupting anything and so when we do this environmental study, it goes to all the different specialists. And they all gave us their thumbs-up. There was nothing that this was disrupting. “

In fact, Duneier uses materials that make no impact on the environment. And unlike most other yarn bombers, who leave their work up indefinitely, Duneier has a self-imposed nine-day limit for his temporary shows. After that, he painstakingly disassembles everything to avoid leaving a trace.

With Alien Campsite, however, nature beat him to it. On the second night a violent wind storm damaged much of the work. “Unfortunately,” says Duneier, “I was at the right place at the wrong time. But it's the process of converting a dream into reality that determines success or failure for me. The time between installation and tear-down is the bonus.”





Columbia Pictures

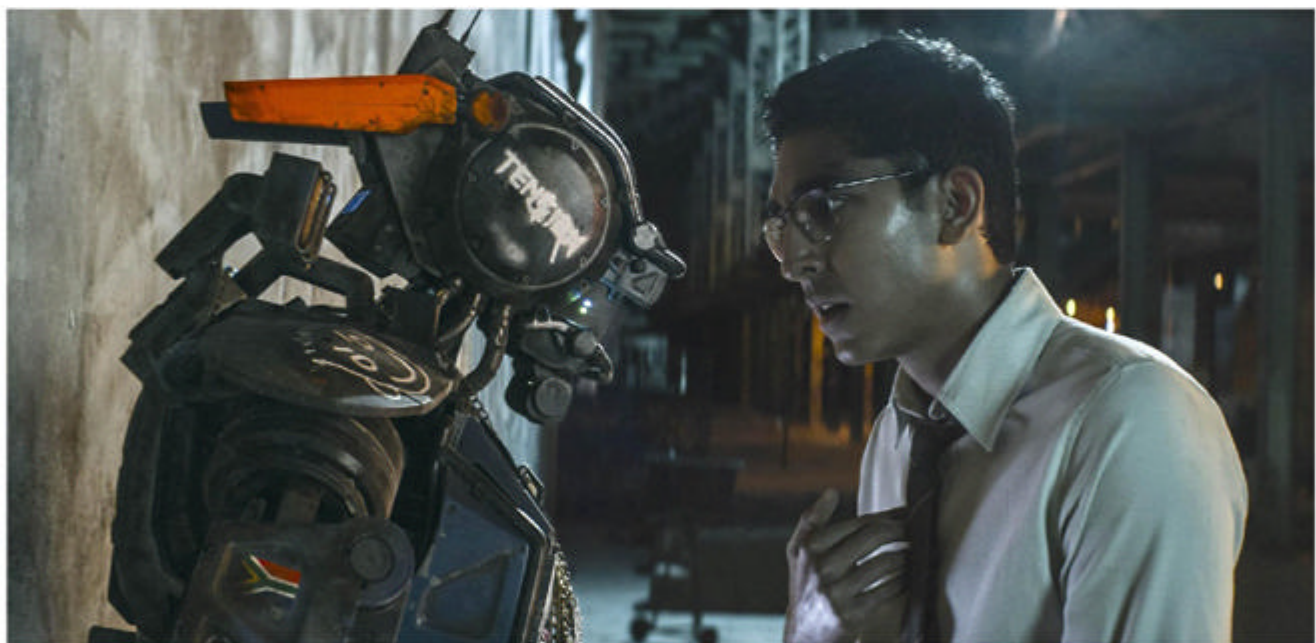
*DIRECTOR NEILL  
BLOMKAMP WANTS  
TO BREAK YOUR  
HEART WITH SWEET,  
GUN-TOTING ROBOT  
CHAPPIE*

**FOR A MOVIE THAT DEALS WITH CONSCIOUSNESS,  
ARTIFICIAL INTELLIGENCE AND THE FORCES OF EVIL,  
CHAPPIE DOESN'T TAKE ITSELF TOO SERIOUSLY.**

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Watching *Chappie*, the latest sci-fi-film-with-a-moral by South African director Neill Blomkamp, will be a disorienting experience for some viewers. Superhero Hugh Jackman stomps through scenes as a baddie with cargo shorts, a thick Australian accent and a thicker mullet. South African rap-hip-hop band Die Antwoord play musicians-gangsters. And the film's title character is an eerily life-like robot who makes E.T. look like a hardass. Bring on the weird.

But *Chappie* also touches on a few issues that give it an air of seriousness, including crime, automated warfare, police brutality and artificial intelligence. Beneath the film's explosive visual effects, comic elements and frenetic pace, lies a disillusionment with how cruel humanity can be. As Blomkamp puts it, are robots “capable of being more human than the humans around them?”



*Chappie with and his maker, played by Dev Patel.* Credit: Columbia Pictures

*Chappie*, which opens in theaters March 6, depicts a dystopian Johannesburg driven to desperation by crime. The city eagerly adopts a proposal to augment local police with “Scouts”—droid police—to beat back the criminals. The Scouts are the brainchild of young, earnest scientist Deon Wilson (*Slumdog Millionaire*'s Dev Patel) and manufactured by defense company Tetra Vaal, headed by CEO Michelle



Bradley (Sigourney Weaver). Wilson's real interest is testing if robots can be made sentient.

Wilson is routinely bullied by Vincent Moore (played with glee by Jackman), a boorish colleague whose own droid invention, a giant, over-engineered and missile-equipped robot called the "Moose" is shelved by police for being too terrifyingly militant. They'd much rather deal with Wilson's rabbit-eared, easily controllable Scouts.



*Kevin Otto and Sigourney Weaver star in "Chappie."* Credit: Stephanie Blomkamp

When one of those Scouts is marked for the scrap heap, Wilson decides to test out his sentient program, stealing the Scout from the Tetra Vaal complex (which has surprisingly lax security for a defense corporation). His plans are abruptly changed when he is hijacked by Ninja and Yolandi Visser (a.k.a. Die Antwoord, playing versions of themselves) who are deeply indebted to a local criminal and want to force the Scouts' creator to program one of his robots to help them with a heist.

Under duress, Wilson reprograms the robot with a consciousness, birthing a naif they call Chappie who quickly proves to be a foil for the broken humanity around



it: “A piece of intelligence and sentience that's clean and uncorrupted...a blank slate born into what I view as a hostile world,” Blomkamp says of Chappie. A nurturing tug-of-war ensues between Wilson, who wants to teach Chappie to paint and emote, and Ninja, who needs Chappie to be more gangster. Caught in the middle is Visser, a maternal figure who feels responsible for protecting the robot's innocence.

If this synopsis sounds over the top, that's because it is. It works though, because Blomkamp doesn't pause to philosophize. Moore, for example, is a rugby-ball-toting villain clad in khaki shorts with a distaste for robotic sentience. His dialogue is littered with Australian slang, some of which Jackman didn't even know existed until he and Blomkamp Googled Australian phrases and came up with “frog in a sock” and “smart as a dunny rat.” The crew “had so much fun with the character,” Jackman says. “I remember at one point saying to Neill, ‘Are we having too much fun here?’”

The film's strangest element is the casting of **Die Antwoord**, the rap duo that has found global success with their graphic videos and over-the-top lyrics, sung in a **blend of Afrikaans and English**. “There's a strangeness to the movie, an off-kilterness that I think they bring that I really like,” Blomkamp says.

The original idea for Chappie stretches back to a video **shot by Blomkamp in 2003** showing a rabbit-eared robot patrolling the streets of Johannesburg. Another of his short films, 2006's “**Alive in Johannesburg**,” provided the outline for what became Blomkamp's hugely popular 2009 feature **District 9**, about aliens stranded in South Africa's financial capital. Blomkamp followed that up with 2013's **Elysium**, starring Matt Damon and Jodie Foster, which was **mocked by some critics** but raked in almost \$300 million worldwide.

District 9, which earned four Academy Award nominations, used the bleak settings of the South Africa's squatter camps as a backdrop for a story of aliens-turned-

refugees. Blomkamp says he was reluctant to return to his native country for Chappie for fear of repeating himself and he initially set the story in a North America location. But he struggled to remove the uniquely South African Die Antwoord from their “native environment” in a way that made sense, so he tried “to create a different version of Johannesburg” than the one in District 9—filming mainly in the suburbs or outskirts instead of the townships, avoiding the shacks and peppering the film with characters from around the world in an attempt to “Americanize” it.



*Ninja, Yankie and Chappie have a discussion about life.* Credit: Columbia

Pictures

As with District 9, this film isn’t an advertisement for Johannesburg Tourism. It plays up some of the biggest challenges facing the country: crime, grinding poverty and crumbling infrastructure. The film is bound to piss off locals, acknowledges Blomkamp, who left the country for Canada when he was 18. But the flipside, he says, is that some aspects of the film, such as the ever-present specter of crime, will resonate with South African audiences. “When I gave the script to the financiers, they viewed the idea of autonomous robots in South Africa as a totally, completely satirical idea,” Blomkamp says. “The irony is that if you take that idea to South Africa,” which suffers from one of the world’s highest crime rates, “you probably have [a majority] of the population agree that it’s a good idea.” Robots “cannot

be corrupted, you can't bargain with them when you get pulled over, you can't [bribe them to] not get a speeding ticket.”

Blomkamp is known for his crisp visuals and frighteningly realistic special effects. Sharlto Copley—a recurring star in his films who has also starred in *The A-Team* and *Maleficent*—played the role of Chappie, acting live with the other actors. It was only later that the post-production team inserted the robot into the action, using real-life as well as digital models. The process has lent the robot shockingly lifelike qualities.

After a recent press screening in New York, one attendee complimented Copley on his depiction of the innocent and abused Chappie, saying there were moments when she left the theater “because it was breaking my heart.”

“The movie has much to say to us in terms of what it is to be human,” says sci-fi veteran Weaver. “That word, human, is a hard word to define now. There’s so many inhumane acts in the film perpetrated by humans, not perpetrated by robots. I love how [Blomkamp] has this cauldron going of all these important issues underneath a very entertaining movie.”





Vittorio Zunzio Celotto/Getty

# *CUE ASTON MARTINS AND PARACHUTES AS BOND CAUSES A STIR IN ROME*

**FILMING FOR SPECTRE HAS STARTED IN THE STREETS  
OF ROME, AND THE ETERNAL CITY HAS BEEN SEDUCED.**

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Like many a conquering hero before him, James Bond has come to Rome. Daniel Craig is here to film *Spectre*, the 24th Bond movie, directed by Sam Mendes. After months of secrecy, street after street is being cordoned off, to shoot

Spectre's spectacular car chases through some of the most beautiful and ancient streets in the world.

Last week, Daniel Craig's metallic grey new supercar, the Aston Martin DB10, raced against David Bautista, Spectre henchman, and real life six-times former world heavy weight boxing champion, passing the Forum and the Colosseum, where Julius Caesar's charioteers sped him towards Senatorial meetings. The Corso Vittorio Emanuele, Rome's main thoroughfare and final express bus route for breathless pilgrims, going from Termini Station to the very heart of the Catholic Church, St Peter's Basilica, was cordoned off for hours over night, as the cars raced at 200km an hour at 11.30pm, stunt drivers in iron cages on the cars' roofs, fighting their scripted battles.

Although onlookers were banned from the set, the inhabitants of the various palazzi that line the Corso took pictures on their phones from their balconies. Bond even suffered a minor injury – Craig hit his head on the roof of his car when it bumped over one of Rome's notoriously uneven Sampietrini cobble stones. Luckily, the on-set doctor pronounced him unhurt.

The word in boho-chic Trastevere – once Rome's medieval slum, linked to the city's Historic Centre by the 15th-century Ponte Sisto footbridge – is that the final stage of the chase will be along the slimy cobblestones of the Tiber's quayside, towards the Ponte Sisto's one-car-wide archway – and that at least one of the cars will end up in the river. Bond is also predicted to parachute from a helicopter on to the Castel Sant'Angelo, the vast tomb of the Emperor Hadrian on the banks of the Tiber, converted into a fortress by the medieval Popes.

Presumably Bond won't be allowed to use the secret passage said to link the Papal stronghold to the Pope's Vatican bedroom; although perhaps Ralph Fiennes, who has been cast as M, will be using it as his Rome office, where even now Q is perfecting an exploding gelato.



“It’s a massive production. Bond is not a tourist in Rome,” shrugged someone involved in the Italian co-production, unable to give their name. Due to the levels of secrecy shrouding the Bond franchise, which would impress even MI6, the production team have all had to sign confidentiality agreements.



*As the secret agent’s 24th mission starts filming in Rome, the streets seethe with gossip about Popes, mafiosi and . . . actors* Credit: Robino Salvatore/GC

“Rome is full of a beautiful, ancient monuments. It would be awful if they broke anything. And they are shooting for four weeks! When Woody Allen shot his film in August, Rome was empty. And Italian bureaucracy is terrible! It would be much easier if they were shooting in the Vatican. They are much more efficient there.”

There is even rumoured to be a real villain for the Bond crew to combat. According to sources in the Italian acting industry, the Bond production has been threatened by the notorious Casamonica, a Romanian gypsy-origin mafia,



relatively new on the Roman scene. “The Casamonica can shut a production down like that,” said a Roman filmmaker, clicking his fingers.

The beauty is supplied by Italian Monica Bellucci, at 50, the oldest actress ever to play a Bond girl; her home town of Citta di Castello, near Perugia, was ruled by the Borgia Popes. Bellucci, whose character is called Lucia Sciarra, described Craig’s Bond as “a hero, but human. A real man”.

In Piazza Trilussa, where the Ponte Sisto disgorges into Trastevere, the café workers and newsagents are resigned to the square being shut for three days to film the riverside car chase. “We’re going to have two huge cranes in the Piazza to pull the cars out,” said the man at the till in Mechanissimo, a café a few yards from the bridge. “We’re being paid not to come to work.” But it’ll take a lot more to impress the man at Mechanissimo than Daniel Craig. “Meryl Streep came into our café the other day,” he said.

“Roman people are quite cynical and indifferent. Bond arriving on a bridge won’t change Rome. But for him it’s like moving in a china shop,” said Alain Elkann, former advisor to Italy’s Minister of Culture, novelist and father of the Agnelli dynasty Fiat heir, Yako Elkann. “Rome is a millefeuille, built on layers of time.”

It’s hard not to be apathetic when you have seen some of the greatest heroes and villains of history and have survived Attila the Hun, Hitler and Napoleon. Rome was sacked by Visigoths in AD410 and Vandals (who gave us the word “-vandalism”) in AD455, Ostrogoths in AD546, the Normans in 1084 and the Holy Roman Emperor Charles V’s mutinous troops in 1527.

Julius Caesar met his death just 150 yards from the Ponte Sisto, in the ancient Theatre of Pompey, which has been a residential street since medieval times. Papal bastard and warlord Cesare Borgia had his victims hurled into the Tiber, along whose banks Bond’s Cinquecento will chase. A temple still stands to Hercules, the original action hero, just

down the river, by busy traffic lights and the 2,200-year-old Ponte Rotto “Broken Bridge”.

But a Bond movie – a huge, international, advertisement for the city – is still something. The glory days are gone for Cinecittà, the film studios outside Rome, where Richard Burton and Elizabeth Taylor shot *Cleopatra*; Gregory Peck and Audrey Hepburn *Roman Holiday*; and when people could make a living as comparsi, professional extras. Although *Ben Hur* is currently being shot at Cinecittà, HBO’s set of Rome now hosts the weddings of Russian oligarchs and there are plans to turn Cinecittà into a film-themed park.

Bond coming to Rome is more like *La Dolce Vita*, where Marcello Mastroianni’s gossip writer tries to be blasé about Anita Ekberg, but is bedazzled by the charisma of her celebrity.

“I live across town,” said Benedict Bucciarelli, who was working as an extra on the Bond film. “I’ve worked as an extra all my life. More than 200 films. Two days ago I was in a scene at the Via San Gregorio, near the Colosseum. And tonight I rented my Citroën to the production for €100. It took me over three hours to get here by bus, but it was an adventure!” He wasn’t saying if he was appearing in any more scenes – that secrecy again.

The notoriously bureaucratic Roman authorities have been surprisingly helpful about granting permits, a fact which would amaze anyone who’d ever tried to pay their gas bill in Rome. The Roman parliament even put off passing a law banning potentially working guns from a film set until December.

Yet, when the crew asked to film at the Quattro Fontane crossroads, the apex of Rome’s political centre, the Quirinale hill, permission was refused. The excuse given was the danger that 007 and the chaos that follows in his wake would somehow damage the four 16th-century fountains, each a tree-lined alcove, sculpted in tufa, in which

loll the goddesses Juno and Diana, and the river Gods Tiber and Aniene, each above a gurgling water trough.

“They’re not so fragile,” snorted their restorer, Carlo Usai, who has spent the last months cleaning the stonework, at a cost of €320,000, paid for by Fendi, while dodging traffic. He pointed to the cars whizzing by. “Apparently, Bond was just going to drive up one side and down the other. The real problem is that this is the busiest crossroads in Rome.”

“Unfortunately, since the President of the Italian Republic daily crosses the Quattro Fontane area, it will not be possible to shoot there due to issues of security,” said Lucia Ritrovato of the Cultural Department of Rome. “Every other permission has been granted. We are very enthusiastic.”

The film crew has instead been seen scouting the rather less-frequented Via Appia Antica, Rome’s ivy-strewn ancient artery to the south. According to an Italian film source, Bond 24 was originally due to shoot for rather longer in Rome. “The production company said they couldn’t be bothered to deal with all the problems,” said the Roman film-maker who warned about Casamonica mafia. “They are just going to shoot a few key locations and then do the rest in a studio.”



01

## FUBAR

Aleppo, Syria - Four years into the uprising against Syrian President Bashar Assad, the bombed-out streets of Syria's largest city are deserted on March 6. Sandbags are used to create barriers between rebel groups. With the rebels fragmented, ISIS has taken root, attracting foreign fighters with its promise to create an Islamist caliphate in the region. Numerous international efforts to broker a cease-fire have so far achieved little.



Hosam Katan/Reuters



02

## HUMP DAY

N’Gouboua, Chad - Herdsmen cross a tributary of Lake Chad on March 5, following a path used by Nigerian refugees fleeing Boko Haram. The militants attacked the village of N’Gouboua before dawn on February 13, using gasoline to torch dozens of houses and killing at least eight civilians and two security officers. It was the first assault of its kind in Chad. Some 3,400 Nigerian refugees were living in the village, and all have since been relocated. On March 7 the Islamist militant group released an audio statement pledging allegiance to ISIS.



Jerome Delay/AP



03

## SELFIE CONTROL

Washington, D.C. - Former U.S. secretary of state Hillary Clinton poses with actress Uzo Aduba during a gala honoring women in politics on March 3. Clinton, the clear front-runner for the Democratic presidential nomination, has been criticized by Republicans and security watchdog groups for exclusively using her private email for government duties while serving in the Obama administration. The Federal Records Act requires the archiving of all official correspondence on government servers. Some 55,000 pages of Clinton's emails were turned over to the State Department, and Clinton took to Twitter to urge the department to release her emails to the public.



Kris Connor/Getty



04

## A DRAMATIC FLARE

Al-Aalam, Salah al-Din, Iraq - Shiite militia fighters on the outskirts of Tikrit launch a rocket March 8 during a battle with ISIS militants for control of the region. Iraqi forces took control of the city after two weeks of fighting, according to U.S. General Martin Dempsey, chairman of the Joint Chiefs of Staff. Since ISIS took control of swaths of the country last June, the U.S. has supported offensives against the insurgents' army with airstrikes. The U.S. military was not involved in the latest ground battles, in which Shiite militias backed by Iran played a key role.



Thaier Al-Sudani/Reuters